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AIR POWER IN IRREGULAR WARFARE

by

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December 2012

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History is full of examples of innovations that have proved essential to victory in war. Few innovations have provided the consistent and often decisive impact that air power has delivered in conflict. Across its relatively short history, the concept of air power has maintained a resiliency of innovation across the doctrinal, strategic, organizational, and technological levels. However, warfare itself has witnessed significant changes over the course of the last century. No longer is the classical, conventional state-on-state conflict the principal method of combating one's enemies. In its place, irregular warfare (IW) has arguably become the norm in conflict today. However, we have yet to see air power applied to modern-era irregular conflicts with the same level of success achieved in past conflicts. This thesis examines the use of air power in IW in order to answer the following questions: What organizational forms are associated with the successful use of air power in irregular warfare? What technologies? What concepts of operations? What level of coherence between strategic and operational/tactical execution is associated with the successful use of air power in IW? And finally, what should the future role of air power in IW be?

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AIR POWER IN IRREGULAR WARFARE

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ABSTRACT

History is replete with examples of innovations that have proved essential to victory in war. Few innovations have provided the consistent and often decisive impact that air power has delivered in conflict. Across its relatively short history, the concept of air power has maintained a resiliency of innovation across the doctrinal, strategic, organizational, and technological levels. However, warfare itself has witnessed significant changes over the course of the last century. No longer is the classical, conventional state-on-state conflict the principal method of combating one's enemies. In its place, irregular warfare (IW) has arguably become the norm in conflict today. However, we have yet to see air power applied to modern-era irregular conflicts with the same level of success achieved in past conflicts. This thesis examines the use of air power in IW in order to answer the following questions: What organizational forms are associated with the successful use of air power in irregular warfare? What technologies? What concepts of operations? What level of coherence between strategic and operational/tactical execution is associated with the successful use of air power in IW? And finally, what should the future role of air power in IW be?

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LIST OF ACRONYMS AND ABBREVIATIONS

ACTS	Air Corps Tactical School
AEG	Air Expeditionary Group
AES	Air Expeditionary Squadron
AETF	Air and Space Expeditionary Task Force
AEW	Air Expeditionary Wing
AFDD	Air Force Doctrine Document
AFSOC	Air Force Special Operations Command
AVG	American Volunteer Group
CAF	Chinese Air Force
CAF	Combat Air Force
CAOC	Combined Air Operations Center
CAS	Close Air Support
CAT	Civil Air Transport
CCT	Combat Controller
CCTS	Combat Crew Training Squadron
CIA	Central Intelligence Agency
COG	Center of Gravity
COIN	Counterinsurgency
CSAR	Combat Search and Rescue
DoD	Department of Defense
FAF	French Air Force
FARC	Revolutionary Forces of Columbia
FID	Foreign Internal Defense
GHQ	General Headquarters
HAHO	High Altitude High Opening
HAPDB	High Altitude Precision Daylight Bombing
ISR	Intelligence, Surveillance, and Reconnaissance
IW	Irregular Warfare
JFC	Joint Force Commander
JP	Joint Publication

MCP	Malayan Communist Party
NATO	North Atlantic Treaty Organization
ODA	Operational Detachment Alpha
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OODA	Observation, Orientation, Decision, Action
OSS	Office of Strategic Services
PAF	Philippine Air Force
PSAB	Prince Sultan Air Base
PSYOP	Psychological Operations
QRF	Quick Reaction Force
RAF	Royal Air Force
RFC	Royal Flying Corps
RNAS	Royal Naval Air Service
SAC	Strategic Air Command
SAS	Special Air Service
SF	Special Forces
SIS	Special Intelligence Service
SOE	Special Operations Executive
SOF	Special Operations Forces
STOL	Short Takeoff and Landing
STOL-RF	Short Takeoff and Landing – Rough Field
UAV	Unmanned Aerial Vehicle
USAAF	United States Army Air Force
USAF	United States Air Force
VE	Victory Europe
VNAF	(South) Vietnamese Air Force
WWI	World War I
WWII	World War II

I. INTRODUCTION

A. BACKGROUND

1. The Innovation of Air Power

Orville and Wilbur Wright tested the first powered aircraft out on the coastal sand dunes of Kill Devil Hills in North Carolina on December 17, 1903. Their success formed the foundation of a technology that is still seeing innovations to this very day. Barely a decade after the first flight, aircraft were used extensively during the combat operations of World War I. Whether acting as the supported force or the supporting force, air power has contributed to nearly every conflict since the Wright brothers' pioneering powered flight.

While air power is barely a century old, the origins of conflict are nearly as old as man himself. As soon as there were interactions between individuals or groups with differing interests, there were also conflicts between the opposing parties. It was Carl von Clausewitz who pointed out that "war is an act of violence meant to force the enemy to do our will."¹ As conflict became inherent to interactions between competing parties, so did the perpetual desire to gain advantage over the opposition. The relentless drive for the upper hand in conflict has consistently manifested itself among militaries and warfare in the form of innovation. Whether doctrinal, strategic, organizational, or technological, such innovations provide the edge that creates advantage in conflict.

History is replete with examples of innovations that have proved essential to victory in war. Conversely, the history of conflict is littered with examples where failure to innovate proved the principal cause of defeat. Many innovations, while initially key to victory, quickly became obsolete. As an innovation, air power, and particularly its use in conflict, is well documented in history, given that it is merely a century old. Few innovations have provided the consistent and often decisive impact that air power has delivered in conflict. Across its relatively

¹ Carl von Clausewitz, *On War* (Oxford University Press, 2007), 31.

short history, the concept of air power has maintained a resiliency of innovation across the doctrinal, strategic, organizational, and technological levels. Much of the credit lies at the hands of air power pioneers such as Billy Mitchell, Giulio Douhet, Claire Chennault, Hap Arnold, and Jimmy Doolittle, among others. These leaders laid the firm foundations upon which classical air doctrine and strategy were built. As a testament to their brilliance, their works provided the methods by which air power fundamentally transformed warfare into a three-dimensional struggle.

While past success and failure provide no guarantee for future realization, air power has a history of innovation and application that has delivered a consistent, if not always decisive, impact on warfare. While nations aim to structure their forces in anticipation of future conflicts, history reflects that often innovations of air power occur in the midst of conflict, out of battlefield necessity. Today, however, they must fight with the force they have. Although forces may be in development, this process takes time and these desired forces may not be immediately available. To that end, this force must be operationalized for current conflicts while still being structured for perceived future threats. This delicate tactical/strategic balance is often difficult to achieve.

2. Air Power in Irregular Warfare

It should come as no surprise that warfare has witnessed significant changes over the course of the last century. No longer is the classical, conventional state-on-state conflict the principal method of combating one's enemies. In its place, irregular warfare (IW) has arguably become the norm in conflict today. For the purposes of this thesis, we will define IW as the effort to impose our will on an adversary through non-customary ways.² This is not to say that there will no longer be large-scale state-on-state conflict, but rather that asymmetric and indirect warfare has risen as the predominant means. The use of

² This definition for irregular warfare is derived from dictionary definition of “irregular” and the Clausewitzian definition of “war.” It is explained in detail in Chapter II.

air power in IW is not without precedent. There is a rich history of using air power in IW, from which much can be learned. With modern warfare fundamentally changed, we have yet to see air power applied to modern-era irregular conflicts with the same level of success achieved in past conflicts.

B. RESEARCH QUESTION

This thesis will examine the use of air power in IW, with the following three questions at its foundation:

- What roles has air power, to include airborne and heli-borne operations, played in IW?
- What types of air power have been most effective in IW?
- What are the characteristics that distinguish the successful uses of air power in IW from unsuccessful ones?

Building upon these three questions, we will further investigate examples of air power in IW to determine:

- What organizational forms are associated with the successful use of air power in irregular warfare? What technologies? What concepts of operations?
- What level of coherence between strategic and operational/tactical execution is associated with the successful use of air power in IW?

Exploring these questions will allow us to frame our search for an answer to the strategically-oriented question: What should the future role of air power in IW be?

C. ORGANIZATION

This thesis will begin with a comprehensive literature review to discuss the evolution of air power doctrine and theory throughout the last 100 years. The review will cover both conventional and irregular doctrine and theory, addressing how they reflect on modern IW air power. Leveraging bodies of knowledge that are both modern and historical, this review will provide the background for the remaining chapters that will survey the uses of air power in IW. Combined with the historical background, we will compare documented uses of air power in IW to existing doctrine and theory.

Following this review, this thesis will then use a heuristic methodology to explore the use of air power in specific irregular conflicts. The heuristic analysis will encompass the organizational, technological, doctrinal, and strategic dimensions of air power and how they contributed to or detracted from overall operational success. Additional analysis will be centered on how the attributes were adopted/diffused by air forces for use in future conflicts. Attention will also be paid to the difference between conventional air forces that execute conventional missions in support of irregular forces, and the actual irregular use of air power. In order to make this study more manageable, the authors have chosen to divide the past century up into four significant periods. Chapter III will discuss early uses, from the dawn of flight through the interwar period. Chapter IV focuses on World War II through the Korean War. Chapter V features vignettes covering the Vietnam War to Kosovo. And finally, Chapter VI will discuss IW from 9/11 to the present. Following this series of vignettes, the authors will provide critical analysis in order to answer the questions at hand and provide conclusions/prescriptions for the future air force.

II. BACKGROUND

A. AIR POWER AND IRREGULAR WARFARE

Since the dawn of aviation, air power has played an essential role in conventional warfare. In fact, most modern air power doctrine and strategy is derived from these conventional roots of aviation. Scattered amidst this conventional use of air power is also the less recognized unconventional and specialist use of air power. While there is some doctrine associated with the use of air power in irregular conflicts, it remains loosely defined in the modern era.

There are countless definitions for irregular warfare (IW). Joint Publication 1-02 defines IW as “a violent struggle among state and non-state actors for legitimacy and influence over the relevant populations. Irregular warfare favors indirect and asymmetric approaches, though it may employ the full range of military and other capabilities in order to erode an adversary’s power, influence, and will.”³ Current Air Force doctrine, Air Force Doctrine Document (AFDD) 1, states that “irregular warfare encompasses a variety of operations where the nature and characteristics are significantly different from traditional war . . . counterterrorism, unconventional warfare, foreign internal defense, counterinsurgency, and stability operations.”⁴ In its purest form, the dictionary defines the term “irregular” in its adjective form as “not being or acting in accord with laws, rules, or established custom.”⁵ Combined with the Clausewitzian definition of war as “an act of violence meant to force the enemy to do our will,” IW can be defined as the effort to impose our will on the adversary through non-customary ways and means.⁶ The term “violence” is the obvious omission from

³ *Department of Defense Dictionary of Military and Associated Terms*, Joint Publication (JP) 1-02, Washington, DC, 2010, 189.

⁴, *Air Force Basic Doctrine, Organization, and Command*, Air Force Doctrine Document (AFDD) 1, 2011, 23.

⁵ Merriam-Webster online dictionary, <http://www.merriam-webster.com> (accessed August 9, 2012).

⁶ Carl von Clausewitz, *On War* (Oxford University Press, 2007), 31.

this definition. While violence is fundamental to warfare and is often a part of IW, there are countless situations where violence is not present and it is therefore excluded from the definition used here.

The most recent version of AFDD 1 defines air power as “the ability to project military power or influence through the control and exploitation of air, space, and cyberspace to achieve strategic, operational, or tactical objectives.”⁷ Alexander de Seversky, the Russian naval aviator turned American military theorist, defined air power as “the ability of a nation to assert its will via the air medium.”⁸ It was Brigadier General Billy Mitchell, however, who defined air power simply as “the ability to do something in the air.”⁹ For the purpose of this thesis, we will use the Billy Mitchell definition. This unrestrained, all-encompassing, but still remarkably simple definition lends itself to the study of air power as it applies to warfare without being hampered by the many conventional paradigms advocated over the years. Using this definition, air power includes, but is not limited to, intelligence, surveillance and reconnaissance (ISR); close air support; strategic attack interdiction; mobility (air-land and airdrop); and air-to-air combat, as well as both airborne and air assault operations from fixed wing, rotary wing and lighter-than-air craft.

Understanding the role of air power in irregular warfare begins with a firm grasp of how air power is applied within the conventional realm. Building upon this knowledge, combined with the key differences between conventional and irregular warfare, the role of air power in IW can be illuminated. Of note is that much like warfare generally, air operations can be conducted across the spectrum of intensity from limited/unconventional war to total/conventional war. The roles of air power are not mutually exclusive, however, and air power can be

⁷ AFDD 1, 11.

⁸ Alexander P. de Seversky, “What is Air Power?” in *The Paths of Heaven: The Impact of Air Power: National Security and World Politics*, ed. Eugene M. Emme (Princeton, NJ: D. Van Nostrand Company Inc., 1959), 201.

⁹ Phillip S. Meilinger, ed., *The Paths of Heaven: The Evolution of Airpower Theory* (Maxwell Air Force Base, AL: Air University Press, 1997), xi.

used in an irregular manner during conventional conflict just as it can be used conventionally during an unconventional or irregular conflict. With this in mind, it is critical to note the difference between conventional air forces that execute conventional missions in support of irregular forces, and the use of air power in irregular ways. This thesis will focus on the latter, wherein lies the true strategic utility of air power in IW. As a result, much of the subject matter covered in this thesis will fall within the broad definition of special operations provided by Dr. John Arquilla as, “that class of military (or paramilitary) actions that fall outside the realm of conventional warfare during their respective time periods.”¹⁰

From Billy Mitchell and the early proponents of air power, to the doctrine writers of the present day, an overarching theme persists: *Air power is strategic*. To advocates of this view, the argument that air power provides not only tactical, but also strategic advantage is beyond reproach. Nevertheless, the methods of applying air power to gain the strategic advantage have been the subject of much discussion over the years. Early air power theorists would argue that the strategic attack and offensive capabilities of air power provide a panacea that has fundamentally altered warfare. This thesis examines the strategic advantage of air power as it is applied to irregular conflict in the effort to illuminate its defining characteristics.

B. AIR POWER DOCTRINE, STRATEGY, ORGANIZATION AND TECHNOLOGY

From Billy Mitchell and Giulio Douhet to John Boyd and John Warden, conventional air power theory has a rich and storied history with dramatic impacts on the doctrine, strategy, organization, and technology of air power throughout history. Scattered between and among the large conventional conflicts where these theories have proved their worth, lies the myriad of other conflicts and operations that don't necessarily fit the mold. It is within these

¹⁰ John Arquilla, ed., *From Troy to Entebbe: Special Operations in Ancient and Modern Times* (Lanham, NY: University Press of America, 1996), xv.

conflicts and operations that this thesis will explore these often small, but seemingly always irregular, wars.

1. From the Dawn of Flight through Interwar Period

The Air Service, United States Army led the way in the development of powered flight with the first military aircraft sale in 1909.¹¹ As early performance limitations were overcome through more robust airframe designs and more powerful engines, aviators began experimenting with carrying weapons in the form of bombs and machine guns. Naval aviation also came into service with the first ship-borne takeoff from the USS *Birmingham* in November 1910.¹² However, despite these innovations pioneered by the Air Service it was the Italians who were first to employ the aircraft in combat during their campaign in North Africa.

The first recorded combat flight flown by the Italians was a reconnaissance mission in Libya on October 23, 1911.¹³ The Italians initially deployed nine aircraft in support of their invasion of Libya and the aircrews quickly began to rack up a number of first-time events from the aerial dimension. Captain Carlo Piazza and his five pilots immediately recognized the force multiplying advantage of the aircraft over what by now was the conventional use of balloons for observation. Captain Piazza's crews in a single flight were able to cover hundreds of square miles more than a balloon tethered in just one place.¹⁴ The Italians laid claim to several additional aviation firsts in combat, including leaflet drops for propaganda, artillery spotting, night-bombing and reconnaissance, as well as radio communications. The first pilots to be wounded and killed in an aircraft as well as the first pilot to be shot down and taken

¹¹ Walter J. Boyne, *The Influence of Air Power upon History* (New York: Pelican Publishing Company Inc., 2003), 35.

¹² Boyne, *The Influence of Air Power*, 36.

¹³ John F. O'Connell, *The Effectiveness of Airpower in the 20th Century: Part One (1914–1939)* (New York: iUniverse, Inc, 2007), 1.

¹⁴ Boyne, *The Influence of Air Power*, 37.

prisoner were all Italian.¹⁵ These men were all pioneers, and within their historical context were just as unconventional as the tactics, techniques and procedures they were developing.

The Italian artilleryman and author, General Giulio Douhet was one of the earliest air power thinkers. As the commander of one of Italy's first air units he was instrumental in formulating early air power theory and authored the first air power employment manual, *Rules for the Use of Aircraft in War*.¹⁶ Douhet believed that air power could be used not just to influence, but also to actually determine the course of the ground war.¹⁷ According to Douhet, aircraft are purely offensive and unstoppable by defenses. He also argued that in order to be successful, air forces must be independent of other forces and "armed, structured, and deployed for the decisive strategic role."¹⁸

During the course of the First World War, air power was largely accepted and even conventionalized into the larger force. Despite this, there were still several instances of air power being utilized in a special or unconventional manner. Walter Boyne notes "reconnaissance pilots were also tasked for special operations that included landing and picking up agents behind enemy lines at night."¹⁹ This was quite an endeavor in the age pre-dating night vision goggles, let alone the most basic flight instrumentation or even aircraft lighting. In addition to these operations, aircraft were also used during the Arab Revolt in support of the Arab insurgency against the Turks.

T. E. Lawrence is perhaps one of the most famous insurgents of WWI. Known as Emir Dynamite, Lawrence embraced technology, in a campaign

¹⁵ Boyne, *The Influence of Air Power*, 38.

¹⁶ Boyne, *The Influence of Air Power*, 137.

¹⁷ Giulio Douhet, *The Command of the Air*, trans. Dino Ferrari (New York: Coward-McCann Inc., 1942), viii.

¹⁸ Douhet, *The Command of the Air*, viii.

¹⁹ Boyne, *The Influence of Air Power*, 69.

against the Turks.²⁰ Developing tactics utilizing armored cars and supporting aircraft, Lawrence operated throughout the Arabian Peninsula.^{21,22}

Although initial air power employment was reconnaissance based, uses branched out into artillery spotting; attacking behind enemy lines; and eventually the pursuit airplane was developed to counter enemy aerial attacks.²³ Douhet picks up here after the conclusion of the First World War and expands on air power theory from a post-war perspective. Douhet foresaw a revolution in how wars would be fought based upon the freedom of action air power created. Central to this idea was the ability to attack beyond an opponent's land and sea defensive forces, against targets limited only by the borders of the nations engaged in the war. Because of this, Douhet also saw a blurring of the line between civilians and combatants who would never be safe from the enemy unless opposing air forces were completely destroyed.²⁴ Douhet favored attacking the enemy's air forces before they even left the ground and likened attacks on the enemy's industrial base to destroying a bird's eggs in the nest before they have the chance to become airborne and escape.²⁵

The key component to the ability to act with freedom in the air was Douhet's concept of command of the air, what we would today refer to as air superiority. He defined command of the air as "to be in a position to prevent the enemy from flying while retaining the ability to fly oneself."²⁶

According to Douhet, command of the air is crucial but is not won by engaging in air battles. Rather, it is achieved by bombing attacks to eliminate the

²⁰ John Arquilla, *Insurgents, Raiders, and Bandits* (Chicago: Ivan R. Dee, 2011), 170.

²¹ T. E. Lawrence, "The Evolution of a Revolt" (*Army Quarterly and Defence Journal*, October, 1920), accessed March 21, 2012, <http://usacac.army.mil/cac2/cgsc/carl/download/csipubs/lawrence.pdf>, 17.

²² Bruce Hoffman, *British Air Power in Peripheral Conflict, 1919–1976* (Santa Monica, CA: RAND Corporation, 1989), 13.

²³ Douhet, *The Command of the Air*, 3.

²⁴ Douhet, *The Command of the Air*, 10.

²⁵ Douhet, *The Command of the Air*, 34.

²⁶ Douhet, *The Command of the Air*, 24.

enemy's ability to resist. This reflects a strategy to defeat an enemy's air force before it has the opportunity to become airborne. Targets should include enemy infrastructure such as industry, communications, and transportation, but above all, the will of the people "in an initial and overwhelming attack" including the use of chemical weapons.²⁷ The battlefield advantage achieved through command of the air is both necessary and sufficient in order to secure victory on the ground. Douhet believed that the outcome of future wars would be determined by air, and that "it was impossible to defend against a bombing attack."²⁸ When questioned on how to defend from an aerial attack, Douhet's response was simply, "by attacking."²⁹ He believed that all a nation could do was to prepare for the "the offensives the enemy inflicts upon us, while striving to put all our resources to work to inflict even heavier ones upon him."³⁰ Douhet also believed that an independent air arm was instrumental in protecting the nation, a theory that General Mitchell was simultaneously championing in the United States. "National defense can be assured only by an Independent Air Force of adequate power."³¹

Although well known for his calls for an independent air force, Douhet also recognized the importance of putting certain aerial forces, those integral to army and navy operations, directly under the control of those services. These auxiliary aviation units were to be financed, organized, and employed solely by the service that they actively support.³² In his 1942 book, *Victory Through Air Power*, Alexander de Seversky echoed some of Douhet's thoughts. De Seversky states that although "certain airplane auxiliaries should reasonably be integrated with the land and sea forces, as part and parcel of those military branches. That, however, does not affect the broader question of a self-sufficient Air Force."³³

²⁷ Boyne, *The Influence of Air Power*, 139.

²⁸ Boyne, *The Influence of Air Power*, 139.

²⁹ Douhet, *The Command of the Air*, 52.

³⁰ Douhet, *The Command of the Air*, 55

³¹ Douhet, *The Command of the Air*, 32.

³² Douhet, *The Command of the Air*, 72.

³³ Seversky, "What is Air Power?," 259.

Both men believed that the independent air arm was crucial in order to field a strategically viable force, yet recognized the tactical advantage of forces working directly with the other services. This concept was also reflected in the earlier theories of Billy Mitchell. There is a certain tactical utility in having air forces closely integrated with ground troops and it is within this tactical utility where we find much of the utility of air power in IW.

Although Douhet and de Seversky agreed on several key points, such as the independent air arm, the two thinkers did not agree on everything. Douhet believed that combat power could be added to a bomber, thereby harvesting the best of both worlds in one aircraft. De Seversky argued, however, this simply did not agree with the experiences during WWII. Consequently, de Seversky would disagree with Douhet that these battleplanes should be the foundation of the air force. Rather, de Seversky suggests that the “backbone of the air force” should be a “combat plane to which bombing power is added.”³⁴ This distinction is significant because it gives the “combat bomber” the ability to counter “pure combat planes” while still being able to conduct the bombing mission. Regardless, neither man saw beyond strategic attack/large scale conflict applications and the support operations of air power to carry such missions out.

Douhet also firmly grasped the importance of civil aviation to maintain the foundation for military aviation to springboard from during times of war. Supported by his theory that “war is fought by masses of men and machines; and masses, whether of men or machines, are composed of the average and not of the extreme,” Douhet viewed civilian aviation as a more than adequate complement to the military forces.³⁵ Nowhere was civil aviation more important than Nazi Germany at the outset of WWII. Denied a military air force by the Treaty of Versailles, the Germans developed a robust civil aviation program which almost immediately translated into a military capability for combat operations.

³⁴ Seversky, “What is Air Power?,” 313.

³⁵ Douhet, *The Command of the Air*, 84.

Douhet believed that demoralizing the enemy's civilian population was absolutely central to achieving victory. However, he saw air power as a direct action tool and not an instrument to be applied indirectly.³⁶ "There is only one attitude to adopt in aerial warfare – namely, an intense and violent offensive, even at the risk of enduring the same thing from the enemy. The one effective method of defending one's own territory from an offensive by air is to destroy the enemy's air power with the greatest possible speed."³⁷ While Douhet made significant contributions to conventional air power theory, his belief that "future wars will be total in character and scope"³⁸ is largely shortsighted in terms of unconventional and irregular warfare.

Rivaled only by Douhet, the British air commander Hugh Trenchard had a profound impact on air power theory, as well as the views of BGen Mitchell himself. Mitchell and Trenchard spent a great deal of time together during WWI. While other theorists focused on breaking an enemy's ability to fight, Trenchard focused on breaking the enemy's will.

The object of war was to force an enemy to bend to one's will, accomplished by breaking either his will or his capability to fight. Armies were generally condemned to concentrate on the latter by seeking battle. Hugh Trenchard, the first chief of the [Royal Air Force (RAF)] and its commander from 1919 to 1930, focused instead on the 'will' portion of that equation.³⁹

Trenchard proposed the use of air power as a strategic weapon designed to "break the morale of factory workers by targeting enemy industry and, by extension, the population as a whole."⁴⁰ While the theories of Hugh Trenchard were never published, as were those of the well-known airmen Mitchell and

³⁶ Douhet, *The Command of the Air*, 126.

³⁷ Douhet, *The Command of the Air*, 111.

³⁸ Douhet, *The Command of the Air*, 6.

³⁹ Phillip S. Meilinger, "Trenchard, Slessor, and Royal Air Force Doctrine before World War II," in *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Phillip S. Meilinger (Maxwell Air Force Base, AL: Air University Press, 1997), 41.

⁴⁰ Meilinger, "Trenchard, Slessor, and Royal Air Force Doctrine before World War II," 41.

Douhet, his teachings were perpetuated through doctrine manuals of the RAF and institutionalized at the RAF Staff College. It was at the Staff College where most of the World War II RAF officers were educated. One of Trenchard's lasting legacies in the RAF was his insistence on the use of air power as an offensive weapon.⁴¹ Trenchard believed in the psychological effects of bombing, and much like Douhet, believed in attacking the morale of the enemy population.

Trenchard did not advocate the bombing of German population centers with the intention of causing a popular revolt (the concept put forward by his contemporary in Italy, Gen Giulio Douhet). Rather, Trenchard implied that the act of bombardment in general—and the destruction of selected German factories in particular—would have a devastating effect on the morale of the workers and, by extension, the German people as a whole.⁴²

One of the greatest successes during the time of Hugh Trenchard was the establishment of the RAF which combined the air forces of the Royal Naval Air Service (RNAS) and the Army's Royal Flying Corps (RFC). Likely considered a "Holy Grail" by many early air power theorists, Hugh Trenchard played a vital role in the establishment and early leadership of the RAF, which was formally established in April 1918. While Mitchell and Douhet both adamantly advocated air force independence, Hugh Trenchard was the only one to command such a force.⁴³

Like many of his counterparts, Trenchard had ground level experience in IW, specifically throughout the Boer War, the South African conflict where the Boers used guerrilla style tactics against the British. It was during this conflict that Trenchard received a bullet through a lung, leaving him with a dry-sticks voice and earning him the nickname 'Boom.'⁴⁴ Trenchard also pioneered the use of air forces in irregular ways. As a firm believer in the use of air power as an offensive

⁴¹ Meilinger, "Trenchard, Slessor, and Royal Air Force Doctrine before World War II," 44.

⁴² Meilinger, "Trenchard, Slessor, and Royal Air Force Doctrine before World War II," 46.

⁴³ Eugene M. Emme, ed., *The Impact of Air Power: National Security and World Politics* (Princeton, NJ: D. Van Nostrand Company Inc., 1959), 157.

⁴⁴ E.R. Hooton, *War Over the Trenches: Air Power and the Western Front Campaigns 1916–1918* (Surrey, UK: Ian Allen Publishing Ltd, 2012), 92.

weapon, Trenchard lobbied that air forces could be utilized instead of land or naval forces to execute missions with a much lower cost in blood and treasure. During the 1920s, he did just that throughout the British territories in the Middle East and Northwest Frontier. In these regions the army was sidelined in favor of the Royal Air Force to “police vast, remote areas.”⁴⁵ Trenchard’s air forces would keep “errant communities” in line by first delivering warning leaflets dropped by air followed by bombings “against a high-value target like crops or herds of animals.”⁴⁶ During the interwar years, it was this imperial role that helped the RAF survive.⁴⁷ Trenchard realized that the British forces were stretched thin after WWI and, in order to maintain its independence, the RAF had to prove its mettle. The result was the concept of air control. While the concept of an independent air service is deeply rooted in conventional air power theory, it is rather ironic that it was the IW mission of air control that kept the RAF as an independent service during the interwar years.

Brigadier General William “Billy” Mitchell is best known today for his passionate zeal for air power and ceaseless quest for the establishment of the Air Force as a separate military service equal to its Army and Navy counterparts. At the time of Mitchell’s service, the Air Force was merely the Army Air Service, the precursor to the Army Air Corps established later in 1926 and finally, the U.S. Air Force in 1947. While the notion of air force autonomy and independent air operations is often considered Mitchell’s most significant contribution, we often fail to credit him with establishing many of the doctrinal roots of the present day U.S. Air Force and having greater effect than any other single individual.⁴⁸

⁴⁵ Alan Stephens, “The True Believers: Airpower Between the Wars,” *In The War in the Air: 1914–1994*, Alan Stephens, ed. American Edition (Maxwell Air Force Base, AL: Air University Press, 2001), 33.

⁴⁶ Stephens, “The True Believers: Airpower Between the Wars,” 33.

⁴⁷ Philip Anthony Towle, *Pilots and Rebels: The Use of Aircraft in Unconventional Warfare 1918–1988* (London, UK: Brassey’s, 1989), 12.

⁴⁸ Mark A. Clodfelter, “Molding Airpower Convictions: Development and Legacy of William Mitchell’s Strategic Thought,” in *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Phillip S. Meilinger (Maxwell Air Force Base, AL: Air University Press, 1997), 79.

Mitchell developed many of his early doctrinal theories regarding air power while serving as the combat air commander for American forces during WWI. In September 1918, Mitchell commanded the First Army Air Service where he coordinated the air support for General John “Black Jack” Pershing’s successful attack on the German positions in the French town of Saint Mihiel. The air attack included American, French, British, and Italian squadrons composed of 701 pursuit, 323 day-bombardment, 91 night-bombardment, and 366 observation aircraft.⁴⁹ This experience confirmed Mitchell’s belief in Trenchard’s theory of using aircraft in an offensive manner and the desire and need for air supremacy.⁵⁰

While Mitchell’s experiences leading air forces in WWI are well documented, rarely is his prior Army experience mentioned. After war erupted with Spain in 1898, a young Billy Mitchell enlisted in the Signal Corps at the age of 18. “Arriving in Cuba in time to witness the surrender of the Spanish garrison, Mitchell remained in occupation duty for seven months before transferring to the Philippines.”⁵¹ The Philippine-American conflict which was also referred to as the Philippine Insurrection was truly an irregular conflict characterized by widespread guerilla and insurgent conflict. Mitchell was no stranger to IW, which likely structured some of his earlier, more tactical air power theories. Mitchell’s early air power theories were also a direct reflection of his WWI experiences. “Mitchell proposed using airpower as a major contributor to a land or sea campaign—not as a substitute for them.”⁵² Based on his experiences, Mitchell advocated dividing air forces into tactical and strategic aviation units. Tactical aviation units would be composed of squadrons operating alongside other army units, attached to the division, corps, or army they supported. “Strategical” aviation units would consist

⁴⁹ Weigley, Russell F. *The American Way of War: A History of United States Military Strategy and Policy*, paperback edition (Bloomington, IN: Indiana University Press, 1977), 224.

⁵⁰ Boyne, *The Influence of Air Power*, 143.

⁵¹ Clodfelter, “Molding Airpower Convictions,” 80.

⁵² Philip S. Meilinger, *Airmen and Air Theory: A Review of the Sources* (Maxwell Air Force Base, AL: Air University Press, 2001), 107.

of independent “bombardment and pursuit formations” operating in the style of a modern day cavalry. These units would serve to carry the war well into the enemy’s country.”⁵³ While the strategic bombing function of air power was present in Mitchell’s early theories, so was a focus on tactical aviation and support for ground troops.

Despite the longevity of his contributions, Mitchell’s doctrinal theories were not static. Over the course of his career, his air power views changed dramatically.⁵⁴ Army leadership largely ignored Mitchell’s early calls for the strategic use of aviation. The obvious indifference of Army senior commanders might offer the best explanation for why Mitchell seemed to become much more outspoken for an independent air force in his later writings and even called for a “reduced emphasis on surface warfare.”⁵⁵ His later appeals for strategic aviation were clearly Douhetian in nature, placing greater emphasis on strategic over tactical.⁵⁶ The central difference between the views of Mitchell and Douhet were Mitchell’s insistence on the “need to combine bombardment attacks with fighter offense for the control of the air.”⁵⁷ Douhet commonly bucked the theory of fighter offense, relying solely on “a screening formation of slow, heavily armed combat planes.”⁵⁸ Mitchell’s theories always emphasized the crucial role of air supremacy and the role of the bomber in particular. This foundation in a bomber air force was necessary at the time to distinguish the Air Force from the Army and Navy while lobbying for the creation of the independent air service.⁵⁹ Many key early U.S. Air Force figures were among Mitchell’s disciples, including the only General of the Air Force, Henry “Hap” Arnold, General Ira Eaker, and the first Air Force

⁵³ Clodfelter, “Molding Airpower Convictions,” 85.

⁵⁴ Meilinger, *Airmen and Air Theory*, 107.

⁵⁵ Meilinger, *Airmen and Air Theory*, 107.

⁵⁶ Raymond R. Flugel, “United States Air Power Doctrine: A Study of the Influence of William Mitchell and Giulio Douhet at the Air Corps Tactical School” (doctoral dissertation, University of Oklahoma, 1965), 134.

⁵⁷ Flugel, “United States Air Power Doctrine,” 151.

⁵⁸ Flugel, “United States Air Power Doctrine,” 148.

⁵⁹ Boyne, *The Influence of Air Power*, 149.

Chief of Staff, Carl Spaatz. With the support of these key men, Mitchell's theories were cemented into current U.S. Air Force doctrine which still prevails today.

The Air Corps Tactical School (ACTS) originated as the Air Service Field Officer's School in 1920 and was later labeled the Air Service Tactical School before becoming the ACTS in 1926.⁶⁰ The task of these schools was to develop the air power doctrine that would come to define the U.S. Air Force and its predecessors even to present day. ACTS began with a four-part strategy to develop an independent air arm by creating responsibilities for the air service or stealing roles and missions from the existing services.

Specifically, the strategy sought to (1) redefine America as an airpower rather than a maritime nation; (2) demonstrate and publicize the versatility of airpower in peacetime roles; (3) create both a corporate Air Corps identity through political maneuvering and an independent air force through legislation; and (4) perhaps most importantly, develop a unique theory of air warfare—unescorted high-altitude precision daylight bombardment (HAPDB) against the key nodes of an enemy's industrial infrastructure.⁶¹

While one could ultimately judge the ACTS as a success based on the end result, "an independent service with an independent mission," its true impact was the development of air doctrine that guided the force during both the intra-war years and WWII and remains woven in the fabric of the AF in the present day.

2. World War II through the Korean War

The years encompassing World War II through the Korean War were a period of great growth in the use of air power and development of the doctrine governing its use. While history frequently recounts the strategic use of air power during this time period, it rarely considers the tactical use of air power to support IW which deserves the same level of accolades. Henry Harley "Hap" Arnold and

⁶⁰ Peter R. Faber, "Interwar U.S. Army Aviation and the Air Corps Tactical School: Incubators of American Airpower," in *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Phillip S. Meilinger (Maxwell Air Force Base, AL: Air University Press, 1997), 186.

⁶¹ Faber, "Interwar U.S. Army Aviation and the Air Corps Tactical School," 186.

Ira Eaker were just two of many air power acolytes, and both were legendary aviators in their own right. Arnold joined the Air Corps when it had but one aircraft in its inventory. He was a student of the Wright brothers, earned the 29th pilot license to be issued and was the recipient of the Mackay Trophy twice. Arnold would go on to become Chief of the Air Corps and was later promoted to General of the Army (5 Star), the commanding general of all air forces during WWII. Arnold later became the only General of the Air Force (5 Star) making him the only General in history to hold the rank of 5 Star General in two separate services. Eaker was also a distinguished aviator and winner of the Mackay Trophy himself. He was the primary pilot of the *Question Mark* during its record-setting endurance flight. Both men collaborated in writing *Winged Warfare*, an authoritative source on air power doctrine, organization and technology, in 1941.

These two forefathers of military aviation, along with BGen Mitchell saw the airplane as the principal innovative weapon of their time.⁶² Generals Arnold and Eaker accomplished something that Mitchell did not, however. Unlike Mitchell, they lived to command air forces in World War II. Billy Mitchell was relatively young when he died in 1936 at age 56, preceding WWII and the actualization of many developments in air power that he championed religiously. Hap Arnold did not pass until 1950 when he was 63, while Eaker passed in 1987 at the seasoned age of 91. As a result, Arnold and Eaker provided continuity for the doctrine and theory developed during WWI and the interwar years. Their contributions combined theory with available technology to significantly influence modern air power theory, with particular influence on operations in WWII.

Arnold and Eaker divided aircraft designs into five basic types: fighters, bombers, reconnaissance/observation, transport/cargo, and trainers.⁶³ Of these five, because of its purely offensive nature, the bomber was considered central to the design of an air force. “Battles and wars are won by a vigorous offensive and

⁶² Henry H. Arnold and Ira C. Eaker, *Winged Warfare* (New York: Harper & Brothers, 1941), 2.

⁶³ Arnold, *Winged Warfare*, 6.

seldom, if ever, by the defensive.”⁶⁴ In spite of this, they also recognized the important roles of fighters, reconnaissance, and transport aircraft. They identified transport aircraft as providing essential support for ground forces including resupply, aeromedical evacuation and transport of heavy equipment.⁶⁵ Among others, these ideas represented a rather rapid expansion of air power theory and more importantly, actual integration of theory in operations. While Arnold and Eaker wrote *Winged Warfare* prior to the American entry into WWII, their ideas were clearly reflected in the actual operations and organization of air forces in WWII not to mention the modern day U.S. Air Force.

Arnold and Eaker challenged the traditional focus on pilots and offensive aircraft. They recognized that not only was the technology important, but the crews who flew and maintained these aircraft were critical as well. The pilot is the primary crew position but other crew positions such as the bombardier, engineer, navigator, radio operator, machine gunner, and observer are essential to mission success. Arnold and Eaker also cite the importance of quality support and maintenance personnel who serve at a ratio of ten men on the ground to every one man in the air.⁶⁶ General Arnold structured crews as well as support functions for critical missions. In what was designated as the U.S. Army Air Corps Classified Project Nine, Arnold authorized the formation of a force to support the British General Orde Wingate’s Chindits, in a brutal behind-the-lines ground campaign in Burma. “Wingate has made innovations in ground warfare; I want some in the air. Wingate’s troops walked into Burma. From now on I want them to fly in and to fly out.”⁶⁷ With these marching orders, Arnold authorized

⁶⁴ Arnold, *Winged Warfare*, 8.

⁶⁵ Arnold, *Winged Warfare*, 17.

⁶⁶ Arnold, *Winged Warfare*, 32–47.

⁶⁷ Henry H. Arnold quoted in, A.H. Peterson, G.C. Reinhardt and E.E. Conger ed., *Symposium on the Role of Airpower in Counterinsurgency and Unconventional Warfare: Chindit Operations in Burma* (Santa Monica, CA: Rand, 1963), 3.

Lieutenant Colonels Phil Cochran and John Alison to build what would later become the First Air Commando Group using “any equipment necessary to the job.”⁶⁸

During the course of World War II, air power was expanded to include not just forces in the air, but also forces delivered through the air, airborne operations. Leaders began to fully realize both the tactical and strategic advantages of air power. Many uses of air power began to take a remarkably irregular flavor. WWII saw great exploration and use of gliders, dirigibles, and airborne soldiers. The utility of parachute troops (air dropped) and air infantry (air landed) had been overlooked by the Americans while the Germans and Russians perfected the tactic in the early days of WWII. However, with the startling success of the German assault on Holland on May 10, 1940 with such troops, the Americans took notice and finally began training of a parachute platoon which rapidly expanded into a battalion.⁶⁹ Many irregular uses of air power were developed and implemented by both the Americans and Germans during WWII. In addition to supporting the Chindits with Project 9, air power was used to support the infiltration, exfiltration, and support of Office of Strategic Services (OSS) backed partisan resistance movements in Europe. For their part, the Germans made use of parachute troops and gliders in innovative and irregular ways.

Throughout the early years of air power, organization was constantly evolving, laying the foundation of the force employed today. In 1941, the Army Air Corps was split in two groups, one comprising combat operations and the other training and supply. The chain of command under combat operations flowed from the Chief of Staff of the Army to the “Commanding General of the General Headquarters (GHQ) Air Force, thence to the Air District Commanders

⁶⁸ Henry H. Arnold quoted in, A.H. Peterson ed., *Symposium on the Role of Airpower in Counterinsurgency and Unconventional Warfare*, 3.

⁶⁹ Arnold, *Winged Warfare*, 56–57.

and the Commanding Generals of the Overseas Departments.⁷⁰ This differed from the support side where the Chief of Air Corps served directly below the Chief of Staff. The GHQ Air Force is comprised of four air districts which divide up the continental United States. Underneath each district is the first tactical air unit, the wing which “as the largest air fighting unit which one commander can efficiently control and directly supervise,” is roughly the size of an army brigade.⁷¹ Under each wing are two or three groups, either composite (both pursuit and bombardment) or heterogeneous. The group “is both a tactical and an administrative unit” and can be compared to a regiment. Finally, the squadron is the “basic flying combat unit” equivalent to a battalion. Squadrons are organized based on their aircraft types that include “transport, fighter, light, medium, and heavy bombardment, and reconnaissance.”⁷² This structure is the foundation for the Air Expeditionary Force today, although some necessary modifications have been made. The numbered expeditionary air force is the largest component of an air and space expeditionary task force (AETF). The size of an AETF may vary, utilizing, in size order, air expeditionary wings (AEW), air expeditionary groups (AEG), and air expeditionary squadrons (AES). Modern AEGs are composite groups, with a blend of assets organized for maximum combat effectiveness.⁷³

To this day, one of the most powerful air power tenets is the concept of unity of command. Unity of command is a lesson that Arnold and Eaker pulled from abroad. The Germans demonstrated excellent use of this concept when formulating a task force to invade Norway in 1940. They designated a single joint force commander (JFC), outside of the standing services, over the expeditionary force comprised of what was determined as the proper mix of air, ground, and sea forces.⁷⁴ The air component was commanded by a single leader under the

⁷⁰ Arnold, *Winged Warfare*, 88.

⁷¹ Arnold, *Winged Warfare*, 93.

⁷² Arnold, *Winged Warfare*, 93–94.

⁷³ Air Force Doctrine Document (AFDD) 2, *Operations and Organization*, 2007, 46–48.

⁷⁴ Arnold, *Winged Warfare*, 103.

JFC. This concept holds true today and is at the very core of how air forces are employed both at home and abroad. AFDD 1 states:

Many airpower capabilities are limited in number; dividing or parceling out airpower into “penny-packets” violate the tenet of synergy and principle of mass. To preserve unity of effort, JFCs normally vest a single air commander with control of all airpower capabilities.⁷⁵

In *Winged Warfare*, Arnold and Eaker also address the concept of air tactics. They define air tactics “as the employment of air units in battle...Tactics come into play only after strategy has run its course.”⁷⁶ They go on to divide air operations into two separate categories, “independent air force operations and co-operative, air-ground, or air-naval operations ...Co-operative aviation concerns itself with the winning of a battle. Independent air force operations with the winning of a war.”⁷⁷ This idea supports the strategic role an air force plays and helps form the foundation for the independent air arm most nations as described in AFDD 1 today, “Airpower is an inherently strategic force ... [and it's] unique characteristics necessitate that it be centrally controlled by Airmen.”⁷⁸

Co-operative aviation functions include observation aircraft, artillery spotting, command missions, mechanized force support, parachute troops/air infantry, air transport, and pursuit. Arnold and Eaker recognized observation aircraft as crucial component to support the ground-based army. “There probably is not a senior commander of land troops in the world today who would enter a battle without his observation aviation.”⁷⁹ This is a sentiment that rings even more true today as seen in the insatiable demand for airborne intelligence, surveillance, and reconnaissance assets. However, although Arnold and Eaker would agree on this point, they cautioned that there were some dangers in air co-

⁷⁵ AFDD 1, 17.

⁷⁶ Arnold, *Winged Warfare*, 106.

⁷⁷ Arnold, *Winged Warfare*, 110.

⁷⁸ AFDD 1, 19–20.

⁷⁹ Arnold, *Winged Warfare*, 114.

operation. The most significant danger was that ground commanders might take to air support too enthusiastically. At first glance, this may not seem like a danger, but upon closer inspection it is clear that an overly enthusiastic ground commander may distract air forces from their first priority that “is not co-operative in character. The first priority missions are the destruction of opposing air forces, and vital enemy objectives beyond the range or theater of influence of land forces.”⁸⁰ Again, this clearly illustrates how air force leadership understands the strategic nature of air power and the priorities of air forces to be in the current era. Today’s force is largely postured to support these strategic missions versus the more typical IW scenarios and requirements that have become almost regular in nature.

Arnold and Eaker asserted that the “first phase in the war will be the air phase … [consisting] of independent air force operations, [including] propaganda missions; reconnaissance missions; anti-air force operations; and bombing missions against vital targets.”⁸¹ Although described in terms of total war between nations these missions are not without application to irregular warfare. During the course of the Polish offensive, the Germans made use of the Fieseler Storch, a latter-day short-take-off-landing (STOL) aircraft, to give commanders and their staff access to the ground battle lines. These aircraft were designed to land in areas otherwise inaccessible to aircraft, “city streets … rough terrain, plowed fields,” and the like.⁸² The Storch was also instrumental in the special operations mission to rescue Mussolini from his prison atop the Gran Sasso Mountain.

Arnold and Eaker outline several key components to the strategy of air force operations: correct thinking; possible adversaries; organization; and training. They defined strategy as follows:

⁸⁰ Arnold, *Winged Warfare*, 125.

⁸¹ Arnold, *Winged Warfare*, 126.

⁸² Arnold, *Winged Warfare*, 115.

Strategy is the art of war; it concerns those principles which a nation employs to overcome an adversary not yet on the battlefield...Air strategy is the method by which a nation expresses its will through the employment of air forces. The principles of air strategy will dictate the creation of an air force, the type of its equipment, its composition, size, and the time and direction of its employment.⁸³

This definition compares well with the current definition of strategy as outlined in AFDD 1.

Strategy defines how operations should be conducted to accomplish national policy objectives. Strategy is the continuous process of matching ends, ways, and means to accomplish desired goals within acceptable levels of risk. Strategy originates in policy and addresses broad objectives, along with the designs and plans for achieving them.⁸⁴

Arnold and Eaker believed that all of the fields above must be considered together and applied during each of the three phases of air strategy: “the strategy of preparation, the strategy of fighting and strategy in peace negotiation.”⁸⁵

Preparation is crucial to success in war. The time required for modern mobilization necessitates that it no longer occurs at the same time as a declaration of war, but rather our air forces must be at fighting strength prior to the outbreak of hostilities. “Unless developed before the emergency occurs, it will be of little value afterwards.”⁸⁶

Air strategy during the war dictates that we must be able to strike a “death blow” to our enemy anywhere he is present, be it his air force, industrial, or logistics bases.⁸⁷ Again, this is doctrine that is upheld today:

⁸³ Arnold, *Winged Warfare*, 140.

⁸⁴ AFDD 1, 4.

⁸⁵ Arnold, *Winged Warfare*, 141–146.

⁸⁶ Arnold, *Winged Warfare*, 149.

⁸⁷ Arnold, *Winged Warfare*, 151.

Airpower (sic) can simultaneously strike directly at the adversary's centers of gravity, vital centers, critical vulnerabilities, and strategy...Airpower can be used to rapidly express the national will wherever and whenever necessary.⁸⁸

Strategy must also be applied in times of peace. Historically, following a prolonged conflict, the United States has drawn down its fighting forces. This is contrary to what Arnold and Eaker argue. "Correct [post-war] strategy indicates that it is unwise to dismantle or destroy all military establishments immediately upon the declaration of a given peace ... The snake under the heel must be kept under heel, lest he come to life again at sunrise."⁸⁹

Eventually, during the course of WWII, leaders such as Major General James H. Doolittle recognized that there was more to air power than just strategic bombing. After taking command of the Eight Air Force from Brigadier General Eaker, Doolittle recognized the inadequacy of the doctrinal idea of invincible bombers. Rather than focusing on protecting the bomber force, Doolittle directed the fighters under his command to focus on destroying German fighters. This subtle shift in doctrine unlocked the "secret of air superiority, a pragmatic recognition of first things first."⁹⁰ Doolittle's goal of achieving true air superiority was instrumental in the outcome of WWII in Europe and the role air power played there. In the case of the Pacific theater, air power and nuclear weapons ultimately determined the course of the war. The successes in both theaters cemented air power theorists' belief in these variations on the ACTS strategies. In the end, the strategic bombardment doctrine developed by the ACTS far outlived the school at Maxwell Air Force Base, Alabama. With the advent of the atomic bomb and the rising threat of the Cold War, this doctrine took root, becoming the focus for American air power and continues to live as a foundation of AF doctrine today.

⁸⁸ AFDD 1, 14.

⁸⁹ Arnold, *Winged Warfare*, 152–153.

⁹⁰ Boyne, *The Influence of Air Power*, 261.

The United States was caught largely off-guard by the Korean War. Following World War II, both air and ground forces were rapidly demobilized as U.S. air power theory focused on nuclear attack as the principal means of strategic bombardment. The investment in irregular capabilities developed by the Carpetbaggers and the Number 1 Air Commando Group were lost when both organizations were disbanded and decommissioned following WWII. Just as in the RAF, the USAF placed “far greater importance and priority [to] ‘strategic’ air than to ‘tactical’ air.”⁹¹ The Air Force even went so far as to abolish “all joint boards charged with writing doctrine.”⁹² The Air Force discarded joint relationships in favor of becoming a dominant service founded on nuclear deterrence and strategic bombing in the form of Strategic Air Command (SAC). This new command began in 1946 and was led from 1948 until 1957 by one man, General Curtis E. LeMay. As the commander of SAC and later as the Vice Chief of Staff and Chief of Staff of the Air Force,⁹³ LeMay would set the tone for development of U.S. doctrine for many years to come.

Caught off guard and unprepared, the newly established U.S. Air Force faced a problem that couldn’t be solved with nuclear weapons. Despite this, the Korean War was largely void of air power used in irregular ways and none of the previous Air Commando units were reactivated.⁹⁴ The Korean War was not without innovation though. The use of the Air Force Fairchild C-119 marked the first time paratroopers were dropped from a tail-loading aircraft.⁹⁵ This change substantially reducing aircraft loading and exit times allowing a much closer grouping of paratroopers on the ground. Korea also marked the first time “[large]

⁹¹ Naval Staff History, *British Commonwealth Naval Operations, Korea, 1950–53*, London, 1967, 30.

⁹² Jeffrey Grey, “Definite Limitations: The Air War in Korea 1950–1953,” In *The War in the Air: 1914–1994*, edited by Allan Stephens (American Edition. Maxwell Air Force Base, AL: Air University Press, 2001), 149.

⁹³ Boyne, *The Influence of Air Power*, 298.

⁹⁴ Phillip Chinnery, *Any Time, Any Place* (Annapolis, MD: Naval Institute Press, 1994), 58.

⁹⁵ John Weeks, *Assault from the Sky: A History of Airborne Warfare* (New York: G.P. Putnam’s Sons, 1978), 131.

quantities of heavy support weapons and vehicles had been parachuted in one operation.”⁹⁶ Also among the largely conventional operations of the Korean War were several isolated irregular uses of air power.

During WWII, the U.S. trained more than a quarter million pilots, many of which remained in the Guard or Reserve following the war. Among these pilots was Brigadier General Harry “Heinie” Aderholt, the officer often credited with being the first modern day Air Commando. After a period of time flying conventional airlift in Korea with the C-47, Aderholt was recruited to establish a special missions detachment with around a dozen pilots and six planes to supporting a “highly classified project involving clandestine operations deep inside North Korea.”⁹⁷ Airborne troops were also used in Korea to drop “small parties of sabotage troops who cut railways or shot up designated enemy troop centres (sic) on much the same lines as the SAS [Special Air Service] had done in the Western Desert or the SOE had done in France.”⁹⁸ For a capability that would be considered irregular even today, the C-47s were modified to hold two 75 gallon napalm bombs under the belly of the transport to drop bombs on lucrative targets found after dropping agents from the aircraft.⁹⁹

Similar to the events that transpired in WWII, air forces created a very versatile and functional irregular capability using available technologies in the midst of a conflict. The air forces were extremely capable and effective in their close relationship held with those they were supporting. However, in a troublesome trend that continues to the present day, the Korean irregular forces were deactivated in 1956 much like they were at the conclusion of WWII.

⁹⁶ Weeks, *Assault from the Sky*, 132.

⁹⁷ Warren A. Trest, *Air Commando One: Heinie Aderholt and America’s Secret Air Wars* (Washington, DC: Smithsonian Institution Press, 2000), 29–30.

⁹⁸ Weeks, *Assault from the Sky*, 132.

⁹⁹ Trest, *Air Commando One*, 33.

3. From the Vietnam War through the Kosovo Conflict

Two of the most commonly referenced modern air power theorists are Colonels John Boyd and John Warden. While their teachings are vastly different, Boyd and Warden came together along with many other strategic air power theories in their belief in “the goal of defeating one’s adversary by strategic paralysis.”¹⁰⁰ A commonly accepted definition of strategic paralysis defines it as “a military option with physical, mental, and moral dimensions that intends to disable rather than destroy the enemy.”¹⁰¹ These two conventional theorists represented a fundamental shift in air power thought, a shift that was proven effective in Desert Storm. While not formalized until much later, Billy Mitchell was a believer in strategic paralysis, “in 1919 he asserted that aerial bombardment’s greatest value lay in ‘hitting an enemy’s great nerve centers at the very beginning of the war so as to paralyze them to the greatest extent possible.’”¹⁰² Current Air Force doctrine puts significant emphasis on striking

rapidly and unexpectedly across all of these critical points adds a significant impact to an enemy’s will in addition to the physical blow. This capability allows airpower to achieve effects well beyond the tactical effects of individual actions, at a tempo that disrupts the adversary’s decision cycle.¹⁰³

Colonel John Boyd was an F-86 Sabre fighter pilot in the Korean War. It was there during his experiences in the infamous MiG Alley, that Boyd “developed his first intuitive appreciation for the efficacy of what he would later refer to as ‘fast transient maneuvers.’”¹⁰⁴ Known as a “*thinking* fighter pilot,” (emphasis original) Boyd “changed the way every air force in the world flies and

¹⁰⁰ David S. Fadok, “John Boyd and John Warden: Airpower’s Quest for Strategic Paralysis,” in *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Phillip S. Meilinger (Maxwell Air Force Base, AL: Air University Press, 1997), 357.

¹⁰¹ Fadok, “John Boyd and John Warden,” 361.

¹⁰² Fadok, “John Boyd and John Warden,” 362.

¹⁰³ AFDD 1, 14.

¹⁰⁴ Fadok, “John Boyd and John Warden,” 363.

fights.”¹⁰⁵ Boyd publicized his theories in a series of briefings that he gave detailing research conducted after his retirement. In his briefing entitled *Destruction and Creation*, Boyd originated the concept of “fast transients... [which] suggests that to win battle a pilot needs to operate at a faster tempo than his enemy.”¹⁰⁶ Under this concept, a pilot must “operate inside his adversary’s time scale” to stay a step or two ahead.¹⁰⁷ The sequence of presentations entitled *Patterns of Conflict* detailed Boyd’s lasting and most famous legacy, the OODA Loop. Initially born from the perspective of fighter style air combat, Boyd’s model is expanded to all human behavior. Perhaps the greatest testimonial to Boyd’s theories is something that few air power theorists realize: much of it also applies to ground combat. The sum of his theories results in a better decision process running faster than the enemy decisions. With his OODA Loop, Boyd contends “that one can depict all rational human behavior—individual or organizational—as a continual cycling through four distinct tasks: observation, orientation, decision, and action.”¹⁰⁸ Boyd called it, “unraveling the competition.”¹⁰⁹ His theory attacked the ability of an adversary to process information which made it universal in applicability and quintessential to strategic paralysis.

While of similar thought, the theory of Colonel John Warden focused more on constructing a conventional campaign plan. Col Warden published his theory in *The Air Campaign: Planning for Combat*, which is “very simply, a philosophical and theoretical framework for conceptualizing, planning, and executing an air campaign.”¹¹⁰ Warden’s central theme was “that airpower possesses a unique capacity to achieve the strategic ends of war with maximum effectiveness and

¹⁰⁵ Robert Coram, *Boyd: The Fighter Pilot Who Changed the Art of War* (New York: Little, Brown and Company, 2002), 5.

¹⁰⁶ Coram, *Boyd*, 327.

¹⁰⁷ Coram, *Boyd*, 327.

¹⁰⁸ Fadok, “John Boyd and John Warden,” 366.

¹⁰⁹ John Boyd quoted in Coram, *Boyd*, 334.

¹¹⁰ John A. Warden III, *The Air Campaign: Planning for Combat* (Washington: National Defense University, 1988), xix.

minimum cost.”¹¹¹ Warden constructed a model based on enemy centers of gravity (COG) that formed in five concentric rings. “The most crucial element of the system—the innermost ring—is leadership. Extending outward from the center, in descending importance to the overall functioning of the system, are the rings of organic essentials, infrastructure, population, and fielded forces.”¹¹²

Warden theorized that an attack on one ring affected the other rings and since leadership was the most important, “destruction or neutralization of the leadership COG(s) produces total physical paralysis of the system.”¹¹³ Although the leadership COG is critical, attacking the outer rings serves a purpose as well, these attacks produce “partial physical paralysis but unbearable psychological pressure upon the leadership.”¹¹⁴ The lasting impact of Warden’s theory lies in its ability to address the “very complex philosophy and theory associated with air war at the operational level.”¹¹⁵

While many air theories focus on either the strategic or tactical levels of warfare, Warden provides operational level theory for planning air campaigns. However, in order for Warden’s theory to be effective, the enemy COGs must be visible in order to be attacked. This is often not the case in an insurgency. In his essay, “Air Theory, Air Force, and Low Intensity Conflict: A Short Journey to Confusion,” Dennis Drew argues that one of the fundamental differences from conventional warfare and major weapons brought to bear during an insurgency is time. The longer an insurgent can draw out a conflict, the more the counter-insurgent appears to be out of control. Time is the insurgent’s friend and the counter-insurgent’s enemy.

Continuing a common trend of the past 200 years, today there is a significant effort to make war as short and decisive as possible. This concept has

¹¹¹ Fadok, “John Boyd and John Warden,” 371.

¹¹² Fadok, “John Boyd and John Warden,” 372.

¹¹³ Fadok, “John Boyd and John Warden,” 373.

¹¹⁴ Fadok, “John Boyd and John Warden,” 373.

¹¹⁵ Warden, *The Air Campaign*, xvii.

shaped the development of technology, strategy and tactics throughout the modern Western world.¹¹⁶ Drew goes on to highlight four other fundamental differences between conventional war and insurgencies: a dual military/civilian focus; the insurgent's use of guerilla tactics as the primary means of combat; the insurgent lives off the land and the people versus a conventional logistics train; the people become the center of gravity for both sides of the conflict.¹¹⁷ All of these fundamental differences call into question the efficacy of conventional air power strategy when applied to this unconventional/IW operation. Specifically, strategic bombing has little effectiveness against an enemy whose supply line cannot be interdicted, whose center of gravity cannot be destroyed through firepower, and whose strength lays in his ability to continue to resist over time.¹¹⁸ Very little professional writing of this period addresses the concept of unconventional war and the insurgencies in the Philippines, Malaya, and Vietnam. However, one document of note is a French analysis of their efforts in Vietnam. Included within this document are Vietminh reports describing how "their tactics could obviate superior enemy airpower (sic) and the difficulty of interdicting an enemy who required few supplies and relied on a very primitive and easily repairable logistic transportation system."¹¹⁹ This was a lesson that the Americans were not prepared to apply to their air power strategy.

Despite the Huk Rebellion, Malayan insurgency, and France's efforts in Vietnam, during the 1950s and into the 1960s, the United States continued to pay little attention to IW and air power's role. The focus for the new service was maintaining independence as the newest military service. Strategic bombing, deep interdiction, and nuclear weapons were the cornerstone of this effort. The Korean War was a conventional distraction and the Air Force, much like the U.S.

¹¹⁶ Dennis Drew, "Air Theory, Air Force, and Low Intensity Conflict: A Short Journey to Confusion," in *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Phillip S. Meilinger (Maxwell Air Force Base, AL: Air University Press, 1997), 323.

¹¹⁷ Drew, "Air Theory, Air Force, and Low Intensity Conflict," 323–325.

¹¹⁸ Drew, "Air Theory, Air Force, and Low Intensity Conflict," 323–325.

¹¹⁹ Drew, "Air Theory, Air Force, and Low Intensity Conflict," 329.

Army remained focused on the conventionally oriented European Soviet threat.¹²⁰ Even when the Military Assistance Group – Vietnam began in 1955, the U.S. Air Force still “had no formal involvement” until 1961.¹²¹ Farm Gate formed on October 5, 1961, with 155 personnel with 16 aircraft; Douglas RB-26s, Douglas SC-47s, and North American T-28s. Operations Mule Train and Ranch Hand shortly followed this operation in January 1962. These operations utilized Fairchild C-123s for mobility and Agent Orange missions.¹²²

During this period, the U.S. Air Force finally began to recognize insurgency/counterinsurgency and established the 4400th Combat Crew Training Squadron (CCTS), otherwise known as Jungle Jim. Followed by the Special Air Warfare Center in 1962, this was simply not enough to shift the conventional doctrinal focus. The Air Force’s basic doctrine manual simply did not address counterinsurgency until 1964 and then only devoted two pages to the subject, a further indication of the continued focus on strategic bombing and nuclear doctrine.¹²³

However, there were other ongoing irregular efforts. Claire Chennault’s Civil Air Transport (CAT), born out of the Flying Tigers unit during WWII, carried on the tradition of airborne mercenaries that started as early as 1912 during the Balkan Wars. This tradition was and is a constant in conflicts throughout all time since. Mercenaries of various nationalities flew during the Mexican Revolution (1913), the Spanish Civil War (1936–1937), Chennault’s Flying Tigers in China (1940s), in the Congo (1964), throughout Southeast Asia (1960s-1970s), and even present-day within Afghanistan.

Throughout the 1940s, Chennault’s CAT supported the Chinese Nationalists led by Chiang Kai-shek and when his forces fled to Taiwan, CAT followed. In an effort to remain in business, Chennault requested outside

¹²⁰ Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 327.

¹²¹ Boyne, *The Influence of Air Power*, 321.

¹²² Boyne, *The Influence of Air Power*, 321.

¹²³ Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 333.

financial assistance and received it, from the Central Intelligence Agency (CIA). Over the next year this relationship grew and the CIA eventually bought the company outright.¹²⁴ CAT continued to support the Nationalists on behalf of Chiang Kai-shek until eyes turned towards Korea. CAT pilots once again proved their mettle during over 15,000 combat missions in support of operations there.¹²⁵ CAT also supported the French in Indochina before being re-branded as Air America. Bird Air and Continental Airlines, operating as Continental Air Services, would join Air America flying throughout Laos and Vietnam.¹²⁶ These operations within the context of the Vietnam War solidified the importance of contract air when conducting irregular warfare, a contribution we see even in the recent conflicts in Iraq and Afghanistan.

4. 9/11 to the Present

The strategy and doctrinal concepts that pervade air forces today are rooted in the theories developed by Mitchell, Douhet, Trenchard, Arnold, and Eaker. However, most of these concepts were established with the threat of total war on the horizon. Although some of the concepts may be applied today, most fail to recognize the threat of irregular warfare. As Dennis Drew explains, “if airpower (sic) dominates ‘conventional’ warfare, then countries [or other non-state actors] that cannot field superior air forces must employ ‘unconventional’ means to gain military success.”¹²⁷ Arguably, Operation Desert Storm could be considered the last truly conventional war and decades prior to that, WWII; therefore, it follows that future conflicts are more likely to be unconventional in nature as well. Irregular has become the new regular. Since unconventional tactics are best conquered with unconventional tactics, air forces should develop doctrine and strategy to reflect this.

¹²⁴ Sterling Seagrave, *Soldiers of Fortune* (Alexandria, VA: Time-Life Books, 1981), 149.

¹²⁵ Seagrave, *Soldiers of Fortune*, 151.

¹²⁶ Seagrave, *Soldiers of Fortune*, 163.

¹²⁷ Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 321.

Today's Air Force doctrine does address irregular warfare in the recently relabeled AFDD 3-24, *Irregular Warfare*. However, this document stands unchanged in content from its August 2007 release as AFDD 2-3 and is largely a re-hash of concepts addressed Joint Publication 3-24, *Counterinsurgency* and predominately discusses the use of conventional assets in an IW setting. This failure to adequately address the issue of air power in irregular warfare is indicative of the continued focus on air power's traditional strategic utility. Immediately following the terrorist attacks on September 11, 2001, the United States demonstrated the great flexibility of its conventional air forces. Special Forces and CIA teams in Afghanistan were fully supported by air, through aerial resupply and highly effective close air support. This was a successful demonstration of how a largely conventional, centrally controlled air force could effectively support an irregular warfare operation. While a testament to the flexibility and skill of modern day airmen, this was largely an example of conventional air power using conventional tactics in support of an unconventional mission on the ground.

The success of air power in the initial stages of Operation Enduring Freedom (OEF) has imbued the Air Force with a false sense of security, much like nuclear weapons did at the conclusion of WWII. The one-size-fits-all approach to air power is a very tempting proposal for the organization for air forces. The draw of this mentality is even more pronounced in a time of fiscal austerity which often occurs in a post war drawdown. The missions in Afghanistan and later Iraq quickly conventionalized as more and more forces were deployed into the respective theaters of operations. While the Air Force once again performed well, it was for the most part, not engaged in irregular warfare. One repercussion of the largely conventional air force in-theater was the expansion of contract air forces. During the conflicts in Iraq and Afghanistan, the contract air business exploded. Companies such as DynCorp International, Avenge Inc, Flightworks Inc, and Presidential Airways have all reaped the benefit of the increased requirements for Intelligence, Surveillance, and Reconnaissance

(ISR) as well as combat airland and airdrop platforms that the air force cannot meet with its current assets.

The full impact of post 9/11 conflicts on air power doctrine, strategy, organization and technology remains to be seen. Just like the developments and advances of WWI and the Interwar years were not fully realized until WWII, the lessons learned in recent conflicts may not fully materialize until the next conflict. The goal of the ensuing chapters will be the analysis of those lessons in historical context.

III. AIR POWER IN IRREGULAR WARFARE – FROM THE DAWN OF FLIGHT THROUGH THE INTERWAR PERIOD

Since the dawn of aviation at the beginning of the 20th century, airmen have been seeking innovative ways to employ air power in the pursuit of military superiority on the battlefield. However, even before then, air warfare in the form of balloons and airships was a discussion item during conferences in The Hague as early as 1899.¹²⁸ H.G. Wells was also prophetic in his 1908 novel, *The War in the Air*, where he wrote about various flying machines competing in aerial combat for control of the skies. As pioneers of heavier-than-air flight, the Wright brothers first produced an aircraft for the military in 1908. This technological advancement would revolutionize how war, both large and small, would be fought in the years to come. As military commanders struggled to learn how to best utilize these technological marvels, airmen found themselves scattered across the globe participating in irregular conflicts and developing tactics, techniques, and procedures literally on the fly. This early use of air power saw airmen as pioneers during insurgencies, mercenaries, and even as air advisors during the Interwar Years.

A. THE DAWN OF FLIGHT

The Air Service, United States Army was established in 1907, as a section within the Signal Corps. The first sale of a military aircraft, the Wright Military Flyer, followed in 1909.¹²⁹ However, at this time only three Army officers were selected to train on the aircraft. Two of them were re-assigned back to their original branches shortly after a training accident left the aircraft badly damaged and requiring extensive repairs. This left Lt Benjamin Foulois as the only

¹²⁸ John F O'Connell, *The Effectiveness of Airpower in the 20th Century: Part One (1914–1939)* (New York: iUniverse Inc., 2007), 1.

¹²⁹ Boyne, *The Influence of Air Power*, 35.

assigned aviator in the Army and he was not even qualified to fly the aircraft.¹³⁰ As the only pilot in the U.S. Army, and teaching himself to fly the Army's only aircraft, Foulois could certainly count his assignment as being outside that of the conventional army of that time.

With the aircraft unable to carry much more than its pilot and observer, conventional wisdom was that the aircraft would be of little use beyond that as a reconnaissance and communication platform.¹³¹ Nevertheless, once this performance limitation was overcome through more robust airframe designs and more powerful engines, aviators began experimenting with carrying weapons in the form of bombs and machine guns. This period also witnessed the birth of naval aviation. The first ship-borne takeoff occurred off of the USS *Birmingham* in November 1910 and the first landing on the USS *Pennsylvania* followed in January 1911.¹³² However, despite these innovations within the U.S. services, it was the Italians who were the first to employ the aircraft in combat during their campaign in North Africa.

On October 23, 1911, the first recorded combat flight was a reconnaissance mission in Libya, then still as a nominal part of the Ottoman Empire, but about to be conquered by Italy.¹³³ The Italians initially deployed nine aircraft in support of their invasion of Libya. While in Libya, Italian aircrews quickly began to rack up a number of first time events from the aerial dimension. Captain Carlo Piazza and his five pilots immediately recognized the force multiplying advantage of the aircraft over what by that time was the conventional use of balloons for observation. Captain Piazza's crews in a single flight were able to cover hundreds of square miles more than a balloon tethered in just one

¹³⁰ Ronald G. Machoian, *Looking Skyward: The Emergence of an Air-Minded Culture in the U.S. Army* (Maxwell Air Force Base, AL, 2004), accessed March 21, 2012, http://aupress.au.af.mil/digital/pdf/paper/wf_0017_machoian_looking_skyward.pdf, 10.

¹³¹ Machoian, *Looking Skyward*, 13.

¹³² Boyne, *The Influence of Air Power*, 36.

¹³³ O'Connell, *The Effectiveness of Airpower in the 20th Century*, 1.

place.¹³⁴ During these reconnaissance flights, the Italian aircraft were also the first to be damaged in combat. Captain Riccardo Moizo sustained three hits to his aircraft's wing while observing a 6000-man enemy encampment.¹³⁵

The Italians continued to lead the world in combat innovations throughout the following year of operations throughout North Africa. Second Lieutenant Giulio Gavotti was the first to drop bombs from an aircraft in combat when he dropped four grapefruit sized bombs on two enemy positions, one in Ain Zara and the other three in the Oasis of Jagiura. Reports of Gavotti's accomplishment spread rapidly and influenced other airmen around the globe as they struggled to explore the possible roles and contributions of air power to the battlefield.¹³⁶ While the U.S. continued to have difficulty with its military aviation program, the Italians laid claim to several additional aviation firsts in combat, including leaflet drops for propaganda, artillery spotting, night-bombing and reconnaissance, as well as radio communications. The first pilots to be wounded and killed in an aircraft as well as the first pilot to be shot down and taken prisoner were all Italian.¹³⁷ These men were all pioneers, and within their historical context were just as unconventional as the tactics, techniques and procedures they were developing.

1. Mercenaries of the Air

Even though, by today's standards, the Italian use of air power in Libya would be considered purely conventional in support of a conventional state-on-state conflict, it was still unconventional for the time and they were successfully leading the world in innovation. Not every nation was as successful. The United States Army first fielded a Wright "Type B" aircraft along the Texas-Mexico border in 1911 within General William Carter's maneuver division. The fledgling

¹³⁴ Boyne, *The Influence of Air Power*, 37.

¹³⁵ Boyne, *The Influence of Air Power*, 38.

¹³⁶ Boyne, *The Influence of Air Power*, 38.

¹³⁷ Boyne, *The Influence of Air Power*, 38.

aviators experienced two landing accidents, one resulting in the death of a student pilot. The accident evoked an emotional response in General Carter and he immediately discontinued flight operations and ordered the aircraft redeployed from the front. The United States Army's first foray into the air ended in failure,¹³⁸ and the U.S. was notably behind its European competitors.¹³⁹ However, this is not to say that there was no innovation occurring within the Western Hemisphere. One needs only to look towards the Mexican Revolution from 1910–1920 for several examples of air power being used during IW in the form of an ongoing insurgency and counterinsurgency.

In 1911, the Mexican government, led by President Porfirio Diaz was overthrown and replaced by Francisco Madero. Madero was then overthrown and replaced by Victoriano Huerta. The rebels Pancho Villa and Emiliano Zapata along with General Venustiano Carranza opposed Huerta himself. The resultant tumultuous climate in Mexico attracted many adventure seeking pilots to work for both the *fедерales* and the rebels in the burgeoning insurgency.¹⁴⁰ John Hector Worden was among these airmen, although he came to work for the Mexican government in a rather indirect manner.

Worden was a civilian pilot, as most pilots were at the time in the U.S., and was sent to Mexico City as a salesman for the Moisant Company. During his time in Mexico City, the Mexicans convinced Worden to conduct several patrols/scouting missions as part of his demonstration. He stayed on as an honorary captain in the Mexican Federal Army, becoming one of the first aviators to have any experience in counterinsurgency from the air.¹⁴¹ One of the tactics that he developed was to perform reconnaissance flights in support of train movements across the rugged Mexican countryside. By flying and observing the railroad tracks ahead of a government train, the train was able to reverse course

¹³⁸ Machoian, *Looking Skyward*, 16.

¹³⁹ Machoian, *Looking Skyward*, 22.

¹⁴⁰ Seagrave, *Soldiers of Fortune*, 19.

¹⁴¹ Seagrave, *Soldiers of Fortune*, 19–20.

and evade an ambush laid by the insurgents. The government was then able to dispatch troops to disperse the rebels and protect the area in question.¹⁴²

Of course, the *federales* were not alone in realizing the potential role of air power. The rebels employed their own mercenaries as well, to include men such as Dean Ivan Lamb and Didier Masson.^{143,144} Lamb became famous when he exchanged pistol shots with Phil Rader during which is largely considered the first aerial dogfight. The two men jostled in the sky each attempting to gain the superior firing position from which he could inflict damage dealt from the barrel of his revolver. Rader scored the only hit in the contest. Both men continued to fire until they were out of ammunition and eventually banked away from each other to return to their respective bases.¹⁴⁵

For his part, Masson made a valiant attempt at aerial bombing with a Martin biplane specially modified with an adjustable bombsight and bomb rack. However, during five separate bombing runs, Masson and his bombardier failed to hit any of their target gunboats. During his final attempt his engine failed over enemy waters and he skillfully glided back across the Guaymas Bay to land in friendly territory.¹⁴⁶ Although he was unsuccessful before his aircraft was damaged beyond repair, Masson still paved the way for future air power innovations around the world.

Around the same time as the Mexican Revolution, but on the other side of the Atlantic, aircraft saw service in the First Balkan War as well.¹⁴⁷ In this case, for the first time in history, all of the conflict participants fielded aircraft, including Greece, Serbia, and Bulgaria who were battling to expel the occupying Turks from the Balkans. However, much like the Mexicans, the Bulgarians were forced

¹⁴² Seagrave, *Soldiers of Fortune*, 20.

¹⁴³ Boyne, *The Influence of Air Power*, 40.

¹⁴⁴ Seagrave, *Soldiers of Fortune*, 21.

¹⁴⁵ Boyne, *The Influence of Air Power*, 40.

¹⁴⁶ Seagrave, *Soldiers of Fortune*, 24.

¹⁴⁷ O'Connell, *The Effectiveness of Airpower in the 20th Century*, 1.

to hire mercenaries as well. In this case, French and Russian pilots were used to crew aircraft obtained through French channels.¹⁴⁸ Much like the Italians' use of air power in Libya, air power in the Balkans was quite conventional by today's definition, but there were still unconventional innovations with respect to aerial bombing. A Russian pilot known as N. de Sakoff was among the mercenaries hired by the Bulgarians to conduct reconnaissance and bombing missions on their behalf.¹⁴⁹

Sakoff's most daring and notorious mission was a bombing raid on the Turkish-occupied Fort Bezhani. During the course of this raid, with no wingman or bombardier to support him, Sakoff made three passes at altitudes below 500 feet, exposed to the gunfire of the fort's defenders. After releasing six bombs, successfully wreaking havoc on the fort below, he was forced to land when his fuel tank had been shot and drained dry. Fortunately, the local Greeks were amicable and assisted in the repair and refueling of the aircraft, enabling Sakoff to make a quick departure for his home base. Sakoff's post-mission reports of the bombing and status of the forces at the fort motivated the Greeks to attack victoriously, expelling the Turks from the region.¹⁵⁰

Shortly after the dawn of aviation, nations were struggling to learn how to best integrate air forces into their overall war strategies. As a result, many nations were forced to employ mercenaries to make up for the shortfall in the capabilities of their own forces. One lesson to be learned here is that in order to be successfully employed, air power must be capable of flexing to the demands of the current conflict. The flexibility of air power is in fact one of the primary tenets of today's U.S. Air Force. Today, however, this flexibility is taken to represent the ability to use multi-role aircraft to execute multiple missions. The ability to execute some missions is partially compromised in order to sustain the ability to conduct others. The modern interpretation of flexibility is based on

¹⁴⁸ Boyne, *The Influence of Air Power*, 40.

¹⁴⁹ Seagrave, *Soldiers of Fortune*, 15.

¹⁵⁰ Seagrave, *Soldiers of Fortune*, 16.

technology rather than tactics. As will be discussed later in this thesis, this often means a less than ideal match between mission set and aircraft. Particularly, expensive to operate 4th generation fighters are often used to execute missions which could be accomplished by simpler and less expensive (in procurement, training, and operations) airframes.

2. The Pancho Villa Expedition

During the early morning hours of March 9th, 1916, in an expression of his anger over U.S. involvement in the Mexican Revolution, Francisco “Pancho” Villa led a group of more than 400 rebels to attack the New Mexico border town of Columbus killing many U.S. citizens.¹⁵¹ Even though taken by surprise, the soldiers at the Army Camp Furlong managed to kill 70–100 of Villa’s men.¹⁵² Afterwards, President Woodrow Wilson chose General John Pershing to lead the expedition to bring Villa and his rebels to justice. To support Pershing, the 1st Aero Squadron from the U.S. Army Air Service was dispatched from Fort Sam Houston, Texas thereby marking the first time an American armed service employed air power in a small-war setting.¹⁵³ The squadron came from Fort Sam Houston, Texas with ten officers and eighty enlisted men to operate eight Curtiss JN-3 “Jenny” aircraft.¹⁵⁴ The aircraft became the eyes for General Pershing and his army, and were directed by the secretary of war to be used purely for observation.¹⁵⁵ In the time span of just five months from March to August 1916, the “1st Aero Squadron flew 540 sorties, covered over nineteen thousand miles, and logged over 340 hours in support of Pershing’s troops on the ground.”¹⁵⁶ Maintenance for the Jennys was poor and when combined with the extreme

¹⁵¹ Max Boot, *The Savage Wars of Peace* (New York: Basic Books, 2003), 183.

¹⁵² Max Boot, *The Savage Wars of Peace*, 185.

¹⁵³ James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence, KS: University Press of Kansas, 2003), 11.

¹⁵⁴ Joe Christy, *American Air Power: The First 75 Years* (Blue Ridge Summit, PA: TAB Books Inc., 1982).

¹⁵⁵ Corum, *Airpower in Small Wars*, 16.

¹⁵⁶ Corum, *Airpower in Small Wars*, 11.

weather and flying conditions, took its toll on the aircraft. Towards the end of the conflict, there were only two barely serviceable aircraft remaining. These two aircraft were in such disrepair, they were destroyed when replaced with arrival of eight new Curtiss R-2S aircraft.¹⁵⁷

While the observation mission would soon become a very conventional use of air power, the 1st Aero Squadron cut their teeth on the expedition to find Pancho Villa. Many aviators would later use this same experience to develop tactics used in WWI. This was likely General Pershing's first experience with air power. Carl A. Spaatz who would later serve as the first chief of staff of the U.S. Air Force served with the squadron during the expedition. This experience showed airman the advantages of direct relationships supporting ground commanders and the extreme importance of good aircraft and dependable maintenance.

B. WORLD WAR I

During the course of the First World War, air power began to be largely accepted and even conventionalized into the larger force. This theme will repeat throughout this thesis, irregular forces often carry out missions that are outside the conventional realm. These missions are later conventionalized and adopted by regular forces. The irregular warfare concept is very contextual, or dependent on the current circumstances. Despite this, there were still several instances of air power being utilized in a special or unconventional manner. One such use of air power involved airdropping baskets of pigeons into German controlled territories, which "encouraged daring civilians to fill in military questionnaires and return them attached to the bird's leg. The average rate of return was 40%, of which half had useful military information."¹⁵⁸ Reconnaissance aircraft and their pilots were often the method of choice to insert agents in enemy territory. Although the landing zones were surveyed by daylight, these special operations

¹⁵⁷ Corum, *Airpower in Small Wars*, 19.

¹⁵⁸ Hooton, *War Over the Trenches*, 75.

were certainly risky since they were conducted at night and often involved landing to either drop off or pick up an agent behind enemy lines.¹⁵⁹ This was quite an endeavor in an age pre-dating night vision goggles let alone the most basic flight instrumentation or even aircraft lighting. In an effort to reduce the risk of capture for the aircrew, agents were often dropped via parachute rather than off-loaded at a landing zone. To facilitate this insertion technique, and counter the hesitant agent, aircraft were modified with both floors and seats that could be released by the pilot in flight.¹⁶⁰

1. Insurgencies

Aircraft were also used during the Arab Revolt in support of the Arab insurgency against the Turks. The British combined armored cars and aircraft used as observation platforms providing a historical version of ISR to “isolate the Turkish headquarters and cause the disintegration of the Turkish front.”¹⁶¹ Much of this campaign is contributed to none other than T.E. Lawrence.

T. E. Lawrence is perhaps one of the most famous insurgents of WWI. Lawrence understood the limitations of technology and used it to execute a devastating guerrilla campaign against the Turks.¹⁶² During this campaign Lawrence pioneered the use of the armored car relying on support from aircraft to strike and harass the Turks along their lines of logistics and supply. Using these tactics, Lawrence effectively conquered the region from the Arabian Peninsula all the way to Damascus.^{163,164}

¹⁵⁹ Lee Kennett, *The First Air War: 1914–1918* (New York: The Free Press, 1991), 36.

¹⁶⁰ Kennett, *The First Air War: 1914–1918*, 36.

¹⁶¹ Robin Higham, “Airpower in World War I, 1914–1918,” In *The War in the Air: 1914–1994*, ed. Alan Stephens, American Edition (Maxwell Air Force Base, AL: Air University Press, 2001), 9.

¹⁶² John Arquilla, *Insurgents, Raiders, and Bandits*, 170.

¹⁶³ T. E. Lawrence, “The Evolution of a Revolt” (*Army Quarterly and Defence Journal*, October, 1920), accessed March 21, 2012, <http://usacac.army.mil/cac2/cgsc/carl/download/csipubs/lawrence.pdf>, 17.

¹⁶⁴ Bruce Hoffman, *British Air Power in Peripheral Conflict*, 13.

Once again, air power was also a component of the conflict in the Balkans during the Second Balkan War. In the beginning, the Great Powers involved provided their own air forces while the Balkan combatants struggled to raise forces of their own. One case in point is the Turks who requested and received assistance from the Germans. In a brilliant deception operation, the Germans sent over volunteer pilots along with aircraft disassembled and shipped as “Red Cross supplies and ‘circus equipment’. Bombs for the German units went through as medical supplies.”¹⁶⁵ As allies of the Turks, the Germans, represented by Captain Erich Serno laid the foundation for the Ottoman Air Force in their image. The Turks were largely supported by German flyers while they constituted their ranks with native pilots and as a result they dressed and organized in German fashion. “By the end of the war the Ottoman Air Force was a modest but viable service, and perhaps the best developed in the Balkans.”¹⁶⁶

2. Dirigibles

The existence of lighter-than-air balloons pre-dates the first powered flight by over a century, as they can be traced back to flight in the late 1700’s.¹⁶⁷ The use of balloons was mostly limited to different forms of observation where their lack of mobility significantly limited their utility. These balloons were initially tethered but when they were later released, their maneuverability was highly dependent on atmospheric conditions such as the wind. Dirigibles changed this. The term dirigible indicates that the balloon was capable of being directed.¹⁶⁸ At the same time powered aircraft were seeing great leaps in technology and capability, airships saw similar advances. Most were placed in either ‘rigid’ or ‘non-rigid’ categories referring to the existence of a metal or wood framework to maintain its shape as opposed to a non-rigid, inflated, balloon-like structure. Most of the early advances in dirigibles were pioneered by the Germans, particularly

¹⁶⁵ Kennett, *The First Air War: 1914–1918*, 180.

¹⁶⁶ Kennett, *The First Air War: 1914–1918*, 181.

¹⁶⁷ Basil Clarke, *The History of Airships* (New York: St Martin’s Press, 1961), 21.

¹⁶⁸ Clarke, *The History of Airships*, 21.

Count Ferdinand von Zeppelin and his Zeppelin Airship Company, although at the outset of WWI Germany had very few airships.

When Germany invaded Belgium [in August of 1914] she owned three commercial airships and six primitive military dirigibles. By the end of the war she had built eighty-eight Zeppelins, each larger and more efficient than the last. As the Allies kept improving their antiaircraft weapons and planes, the Germans were forced to make bigger and faster airships. Their last one 750 feet long, with a capacity of almost 70,000 cubic meters, was capable of flying as high as five miles.¹⁶⁹

The Germans used their airships to drop bombs over England with the first successful bombings coming around Christmas 1914. The Germans launched nearly as many airship bombing raids over Britain as they did winged aircraft bombing raids. While the aircraft raids were much more effective in overall damage, the psychological effect of the Zeppelin raids was noteworthy. “It cannot be denied that the moral effect of these silent attacks from zeppelins drifting with engines stopped over the heart of a great city was very considerable.”¹⁷⁰

The Allies were decidedly slow to develop a dirigible capability. Where the Germans focused on the rigid bodied Zeppelins, the Allies used mostly non-rigid airships. In the U.S., the Army Air Service was focused on powered aircraft and paid little attention to dirigibles. In fact it was the U.S. Navy that first fielded an airship which it bought in June of 1915.¹⁷¹ While airships quickly became a much conventionalized capability, the U.S. Navy used them with great success for both convoy escort and German submarine detection. By the end of 1918, it was common practice for a U.S. Navy dirigible to stay airborne for up to 2 ½ days, casting little doubt on the claim that “no ship or convoy escorted by an airship was ever attacked by a submarine.”¹⁷²

¹⁶⁹ John Toland, *Ships in the Sky: The Story of the Great Dirigibles* (New York: Henry Holt and Company, 1957), 51.

¹⁷⁰ Clarke, *The History of Airships*, 94.

¹⁷¹ Clarke, *The History of Airships*, 146.

¹⁷² Clarke, *The History of Airships*, 82.

Amid the rapid conventionalization of dirigible use, there were still several truly irregular uses of this air power capability. Faced with the problem of bombing Britain from Zeppelins through a dense layer of clouds, the Germans developed what became known as a “spy car.”¹⁷³

[They] first experimented with a butter tub. The tub was hooked onto a steel cable 1000 feet long and lowered by a hand windlass from the bombing compartment. Before long, Zeppelins could fly high above dense clouds and yet bomb with deadly aim: a little observation basket, connected to the control car by telephone, would be swinging in clear skies a mile below the airship.¹⁷⁴

Perhaps the greatest irregular usage of dirigibles during the First World War was again at the hands of the German Zeppelins. The German commander in East Africa, von Lettow-Vorbeck, “was holding out successfully against strong attack from British forces but he was running short of supplies and there was no certain sea route by which he could obtain relief.”¹⁷⁵ The German High Command determined that the only feasible way to resupply the German forces in East Africa was via airship. Zeppelin L-59, at 750 feet long with a diameter of 80 feet would make the trip from Bulgaria (a German Ally country) to East Africa where it would resupply troops and then be cannibalized for its materials. The Zeppelin carried “fifty tons of equipment including 311,900 boxes of ammunition, 230 machine-gun belts, thirty machine guns, sixty-one bags of medical supplies, two sewing machines, and a case of cognac.”¹⁷⁶ After travelling nearly 2800 miles from their departure point and just 200 miles from their destination, the crew of L-59 received a message directing them to return the base in Bulgaria. British Intelligence had created a false report indicating that von Lettow-Vorbeck had surrendered. The report was so convincing that Berlin accepted it and relayed instructions to the Zeppelin.¹⁷⁷ The crew rapidly dumped 11,000 pounds of cargo

¹⁷³ Toland, *Ships in the Sky*, 52.

¹⁷⁴ Toland, *Ships in the Sky*, 52.

¹⁷⁵ Clarke, *The History of Airships*, 99.

¹⁷⁶ Toland, *Ships in the Sky*, 55.

¹⁷⁷ Clarke, *The History of Airships*, 100.

and ballast, including the cognac, and returned to Bulgaria via the Mediterranean while dodging British ships and searchlights that were warned of their transit.¹⁷⁸ By the time L-59 landed, it had nearly completed a resupply mission for the history books. The German Zeppelin had been airborne for ninety-five continuous hours and covered 4225 miles non-stop.¹⁷⁹

One of the major lessons learned from the Great War was the importance and difficulty in “matching men and weapons and doctrine, [a point which is] always a prime problem in innovation.”¹⁸⁰ This lesson is one many air forces continue to learn today. Nations are often compelled to go to war with the forces fielded in an attempt to predict the nature of future conflicts. Unfortunately, as a result, rather than using a tack hammer for a delicate job, e.g. IW, nations attempt to tackle the task delicately with a sledgehammer, tool designed for a wider application of force, e.g., conventional warfare. Although this can certainly be done, the results are generally not as polished if the right tool was used for the right job.

C. INTERWAR YEARS

1. Colonial Air Control

One of the greatest theories that emerged from WWI was “the belief that offensive airpower through the form of bomber aircraft would dominate future wars, to the extent that it alone could decide the outcome.”¹⁸¹ The re-focus of warfare against “the heart of the enemy homeland and population” was contrary to the prevailing doctrine at the time and would challenge the dominance of armies’ and navies’ “Clausewitzian wisdom” for some time.¹⁸² This was the

¹⁷⁸ Toland, *Ships in the Sky*, 56.

¹⁷⁹ Toland, *Ships in the Sky*, 56.

¹⁸⁰ Higham, “Airpower in World War I, 1914–1918,” 19.

¹⁸¹ Stephens, “The True Believers: Airpower Between the Wars,” 30.

¹⁸² Stephens, “The True Believers: Airpower Between the Wars,” 31.

setting for early air power theorists such as Trenchard, Douhet, and Mitchell as they extolled the ideals of the independent air force.

Following the conclusion of WWI, air power continued in the limelight as the colonial powers sought to maintain control over their widespread realms. During this period the British successfully defeated an insurgency in Somaliland led by the Mad Mullah, Sayyid Muhammed. In this case, aircraft supported reconnaissance and bombing missions and enabled the ground forces to expel the Mullah and defeat the rebels at the cost of a mere £77,000.¹⁸³ Seeking to extend the utility and legitimacy of an independent air force, Trenchard put his theory of substitution, or air control, to the test. The heart of the concept was to replace land and/or naval forces with air power that could achieve the same goals “effectively at far less cost in terms of casualties and cash.”¹⁸⁴

Errant communities were given a warning, sometimes by notes dropped from the air. If they remained refractory, bombing attacks would be conducted, usually against a high-value target like crops or herds of animals, often at prewarned times. Attacks could be sustained if necessary, in effect ‘blockading’ a village.¹⁸⁵

Building upon this success and the amazingly low cost, the British applied this new theory throughout their empire to settle what had become expensive rebellions in Iraq, Transjordan, and India.¹⁸⁶ Notably, air control was not always a great success. When terrain and demographics allowed, as in Iraq, the theory could be applied judiciously. However, “when rugged terrain and/or nomadic peoples made targets difficult to find and attack,” success was more elusive.¹⁸⁷ One notable example of this was T.E. Lawrence’s unsuccessful attempt to replicate his efforts in Arabia among the Pashtuns in the mountains of Waziristan in the 1920s.

¹⁸³ Hoffman, *British Air Power in Peripheral Conflict*, 7.

¹⁸⁴ Stephens, “The True Believers: Airpower Between the Wars,” 32.

¹⁸⁵ Stephens, “The True Believers: Airpower Between the Wars,” 33.

¹⁸⁶ O’Connell, *The Effectiveness of Airpower in the 20th Century*, 179.

¹⁸⁷ Stephens, “The True Believers: Airpower Between the Wars,” 33.

In addition to the British experience, the French employed colonial air control as a component of their campaign in Morocco. French air squadrons used airdrop tactics to resupply isolated small garrisons throughout the inhospitable terrain of the Rif region.¹⁸⁸ The French also pioneered the use of former bombers specially modified to serve as aerial medevac platforms. Using these aircraft to gain access to landing zones near the front lines, they were able to get their sick and wounded to hospitals in under an hour.¹⁸⁹ However, despite these successes, air power was not sufficient to end the war on its own. In Morocco, as in Syria against the Druze rebels, the French were only “able to conclude the war by massive use of conventional forces and firepower.”¹⁹⁰

2. Air Advisors

Finally, in the years leading up to the Second World War, China became entangled in a violent struggle against the Japanese. As a state on state conflict, the Sino-Japanese War would most certainly be considered conventional. However, just like in previous conflicts, there were irregular and special components; in this case they were characterized by the rise of the air advisor.

During the years leading up to the Sino-Japanese War, the Chinese had enlisted several former U.S. Army Air Corps pilots as well as advisors from Italy to train the struggling Chinese Air Force (CAF). In 1937, Chiang Kai-shek’s wife recruited Claire Chennault to inspect the CAF and report on their readiness.¹⁹¹ Chennault had not even finished his report before the Japanese attacked and quickly achieved air superiority over the ill-prepared Chinese.¹⁹² In response, Chennault recruited aviators from around the world to form the 14th Volunteer Bombardment Squadron and set about training his men in contemporary

¹⁸⁸ Corum, *Airpower in Small Wars*, 75.

¹⁸⁹ Corum, *Airpower in Small Wars*, 76.

¹⁹⁰ Corum, *Airpower in Small Wars*, 79.

¹⁹¹ O’Connell, *The Effectiveness of Airpower in the 20th Century*, 203.

¹⁹² O’Connell, *The Effectiveness of Airpower in the 20th Century*, 204.

tactics.¹⁹³ Within a year of full-scale conflict, the Russians joined the fight by providing both aircraft and air advisors as well.¹⁹⁴ Eventually, Chennault was able to garner further support from the United States in the form of the American Volunteer Group (AVG), better known as the Flying Tigers.¹⁹⁵ Despite the courageous efforts of this volunteer force, the Japanese would continue to dominate the skies over China. The AVG would fight valiantly on behalf of the Chinese until the band of mercenary pilots was disbanded on July 4, 1942.¹⁹⁶

D. CONCLUSION

Air power was anything but conventional during its introduction to the battlefield from the first military aircraft in 1908 to the start of WWII in 1939. Through intrepid experimentation and trials by fire on the battlefield, airmen developed and revolutionized the tactics, techniques, and procedures for employing air power. As armies, and insurgents, discovered their utility, aircraft played a significant role in several irregular and small wars around the world. This early use of air power saw airmen as pioneers during insurgencies, mercenaries of the air, and even as advisors to foreign air forces during the Interwar Years. The British and other colonial powers would utilize the strategy of air control until the collapse of their empires. Even as the use of aircraft became accepted and somewhat conventionalized during the course of WWI, airmen continued to fly on the cutting edge, conducting the first special operations night infiltration and exfiltration behind enemy lines. The technological advancement of the aircraft and the airmen exploring their employment in irregular warfare would revolutionize how war, both large and small, would be fought for years to come.

When viewed from the perspective of the current era, many of the roles and missions of air power from this time period would be considered regular. But

¹⁹³ O'Connell, *The Effectiveness of Airpower in the 20th Century*, 206.

¹⁹⁴ Boyne, *The Influence of Air Power*, 180.

¹⁹⁵ Seagrave, *Soldiers of Fortune*, 84.

¹⁹⁶ Seagrave, *Soldiers of Fortune*, 101.

viewed in the context from which they occurred they are decidedly irregular. As a result, air power's character is extremely contextual, that is relative to the time period during which it occurs. While it was common for irregular capabilities to become conventionalized, there were still cases where the basic air power capability was used in a manner that was truly innovative for its time.

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IV. AIR POWER IN IRREGULAR WARFARE: WORLD WAR II THROUGH THE KOREAN WAR

A. WORLD WAR II

By the beginning of WWII, much had changed since the advent of powered flight and its first large-scale use in WWI. Change was nearly constant as WWII progressed. Still in its infancy, air power was in a state of continuous adaptation. Many would argue that it was not until WWII that air power began to achieve its full potential. While the regular use of air power was extensive, during this time the irregular use of air power formed an adequate complement to its more publicized counterpart. While the irregular use of air power came in many different forms, much of it was designed to enter into a territory by force. The current Joint Publication (JP) 3-18 defines forcible entry as “a joint military operation conducted against armed opposition to gain entry into the territory of an adversary by seizing a lodgment as rapidly as possible in order to enable the conduct of follow-on operations or conduct a singular operation.”¹⁹⁷ The JP describes the three types of forcible entry operations: amphibious assault operations, airborne assault operations, and air-assault operations. Much of this chapter will deal with the latter two.

Airborne forces parachute into the objective area to attack and eliminate armed resistance and secure designated objectives. Airborne forces may also be employed from a lodgment in additional joint combat operations appropriate to their training and equipment . . . air assault forces execute forcible entries using fixed- and rotary-wing aircraft. Air assault forces can deploy from land-based facilities and naval platforms. These forces can rapidly project combat power throughout the depth of an operational area.¹⁹⁸

The common ground between the two is often the end goal, “a forcible entry may be designed as a coup de main that will achieve decisive results.

¹⁹⁷ Joint Publication (JP) 3-18, *Joint Forcible Entry Operations*, 2008, I-1.

¹⁹⁸ JP 3-18, I-7.

Often conducted by small forces conducting short duration, limited objective attacks against opponents with modest but still lethal capabilities, these operations are seldom studied in detail but may be the most likely type of forcible entry in the near future.”¹⁹⁹

1. Airborne

Modern air forces owe many things to the air power proponents that cut their teeth on the capability prior to WWII. Few credit air power pioneers like Billy Mitchell and Giulio Douhet with the development of airborne operations, a capability traditionally dominated by land forces. But it was Billy Mitchell who in 1918 conjured up an idea to break the deadlock of trench warfare in WWI. As commander of the First Army Air Service in France, Mitchell recommended flying “over the obstacle and [landing] a force behind it, using aeroplanes to carry the force and parachutes, a significant idea, to land them in action. This suggestion was the first real milestone in airborne history, for it was the first time that a suggestion for the use of the parachute as a means of military movement was made.”²⁰⁰ The assault plan, that likely would have included a force of nearly 15,000 men, was vetoed by General Pershing, Commanding General of the American Expeditionary Force shortly before the peace of the Armistice ruled it out.^{201,202} At the time, Mitchell unsuccessfully pitched a different proposition to Pershing. While his request was tactical in nature, it was ahead of its time, as the Germans would later accomplish it with great success. Mitchell proposed in the spring of 1919 that Pershing “should assign one of the infantry divisions permanently to the Air Service” where they would be equipped with parachutes and be dropped behind German lines.²⁰³ Similar to Mitchell and his theories for

¹⁹⁹ JP 3-18, I-5.

²⁰⁰ John Weeks, *The Airborne Soldier* (New York: Blandford Books Ltd., 1982), 12.

²⁰¹ Weeks, *The Airborne Soldier*, 12.

²⁰² Weeks, *Assault from the Sky*, 8.

²⁰³ William Mitchell quoted in, Gerard M. Devlin, *Paratrooper!: The Saga of U.S. Army and Marine Parachute and Glider Combat Troops during World War II* (New York: St. Martin’s Press Inc., 1979), 22.

airborne operations, Giulio Douhet had significant influence on Italian airborne operations. Following Douhet's lead, in 1927 "Italy became the first country to try practical military parachuting using an improved form of escape parachute supplied to balloon observers and aircrew."²⁰⁴ While the most significant development of airborne capabilities in the 1920's and 1930's was by the Russians, it was the Germans who fully embraced the concept and by 1936 had already established a parachute school to develop equipment and training methods.²⁰⁵

In June 1938 Adolf Hitler, *Führer* of Nazi Germany directed General Kurt Student to establish a new airborne division as a part of the *Luftwaffe* (Air Force). Hitler's, plans for these irregular forces were evident when he elected to place the division under the *Luftwaffe*. General Student, who was born in 1890, was a decorated WWI fighter pilot before becoming an officer in the German infantry. His very diverse background came full circle when he returned to the German Air Force to "take over the task of organizing and training the airborne troops."²⁰⁶ General Student's multi-service background made him ideal to command the airborne forces. While placing airborne forces under the control of the *Luftwaffe* might seem backwards to most military force structures, the cohesiveness of this force structure later proved critical to the success of several German airborne (and glider-borne) operations. Placing airborne forces under the control of the *Luftwaffe* "ensured the minimum of friction between the providers of the transport fleet and the men who would use them."²⁰⁷ The German airborne forces included the *Fliegerdivision* (paratroopers), *Sturmregiment* (glider borne assault), and *Luftlandedivision* (infantry) which was from the Army. While many operations included both paratroopers and glider borne forces, they will be addressed below according to which force was the main effort for each specific action.

²⁰⁴ Weeks, *Assault from the Sky*, 8.

²⁰⁵ Weeks, *Assault from the Sky*, 10.

²⁰⁶ Albert Merglen, *Surprise Warfare: Subversive, Airborne and Amphibious Operations* (London: George Allen & Unwin Ltd., 1968), 28.

²⁰⁷ Weeks, *The Airborne Soldier*, 20.

General Student and the *Luftwaffe* held a very different view of this truly irregular version of air power when compared to their army counterparts. Student viewed airborne forces as an extension of the bomber.²⁰⁸

They had foreseen the time when there might be targets that had to be bombed, but which were too heavily defended for the bombers to get through to them. In these cases the *Luftwaffe* proposed to parachute in demolition parties some miles from the target, which they would then approach carefully and sabotage using equipment and explosives carried on them. They would then withdraw to open country and either prepare a landing strip, or select a piece of road for use as a landing strip, and be picked up by aeroplanes.²⁰⁹

In Early 1940, Hitler was determined to invade Scandinavia, to preempt the British whom he thought were about to send forces there. This region was critical to both Germany and the Allies for its significant supply of iron ore. The successful simultaneous invasion of both Denmark and Norway relied heavily on surprise, resulting in a comprehensive plan where “for the first time in war parachute troops and air-landed troops were to be used together, the parachutists to seize the airfields, and the air landed units to consolidate and spread out from these bases.”²¹⁰ Innovative at the time, airfield seizures are a standard ranger tactic today. A single battalion was allocated for the operation. In Norway, forces were to capture the airfields at both Oslo and Stavanger that would permit reinforcements both from the sea and air. In Denmark, forces were to capture two airfields located close together along with a vulnerable road bridge to assist invading forces. To achieve surprise, all the targets in both countries were to be attacked simultaneously. For the operation, the *Luftwaffe* allocated 550 twin engine Ju-52s and many four engine Ju-90s.²¹¹

The two Danish airfields were taken with ease by the 30-man platoon and within two hours the *Luftwaffe* was operating at the forward base. The 60

²⁰⁸ Weeks, *Assault from the Sky*, 10.

²⁰⁹ Weeks, *Assault from the Sky*, 10.

²¹⁰ Weeks, *Assault from the Sky*, 15.

²¹¹ Merglen, *Surprise Warfare*, 47.

paratroopers tasked with capturing the bridge accomplished their mission in just 10 minutes. The commander “used surprise as his only real weapon, relying on the early morning torpor and slow reactions of the Danish conscripts for his success.”²¹² In Norway, the objectives were not taken with such ease. The paratroopers landing on the first airfield near Stravanger were faced with poor weather and moderate resistance. After initially being scattered on the ground they secured the airfield long enough to be reinforced by the air-landed troops and had the surrounding area secured within two hours.²¹³ The airfield near Oslo posed a greater challenge.

Weather was poor and air defenses were heavy surrounding the Oslo airfield. The German airborne forces were delayed and met heavy resistance from the full mobilization ordered by the King. Messerschmitts provided strafing prior to the arrival of the Junkers with their air-landed forces. Then, in a true irregular use of air power, after running out of fuel, the flight commander of the Messerschmitts made “a typically brave and daring move. He landed his force and used them as machine gun support for the shattered Junkers to come in.”²¹⁴ The air-landed forces successfully forced the Norwegians to pull back from the airfield. The follow-on forces that arrived by air and sea in the days that followed ensured German control over both countries. The Norwegian campaign announced to the world that airborne operations were a real threat. Airborne troops struck a “decisive blow” and were immediately supported by “the swift arrival of reinforcements” via air-land.²¹⁵ “For the first time in history no part of a defender’s country was safe from attack.”²¹⁶

When Hitler decided that it was time to take Holland, once again Student was chosen to lead the operation and “was given virtually a free hand in deciding

²¹² Weeks, *Assault from the Sky*, 15.

²¹³ Weeks, *Assault from the Sky*, 16.

²¹⁴ Weeks, *Assault from the Sky*, 16.

²¹⁵ Merglen, *Surprise Warfare*, 48.

²¹⁶ Weeks, *Assault from the Sky*, 18.

the uses of his airborne troops.”²¹⁷ Although Student devised the plan for the Dutch campaign well before Hitler elected to take Norway and Denmark, he still elected not to alter the plan. The assigned mission was “seize the capital, neutralize the Government and take the Queen prisoner.”²¹⁸ The strategy for the campaign was solid, but it was not executed as planned. The plan called for paratroopers to seize The Hague by landing directly on top of it. Other units would take key bridges and airfields in order to facilitate the advancement of ground and air-landed forces. One of these operations was the assault on Eben Emael which will be addressed in the next section on gliders. However, the Dutch knew what to expect after the Germans executed the Norwegian campaign so successfully.

Instead of sending their reserves well forward, [the Dutch] held them back around the airfields, realizing that the airborne attack depended for its success on landing infantry in aircraft which had to make repeat trips. Had there been no advance warning it is possible that Student’s plan would have worked, but with the example of Norway to study, it was in jeopardy from the start.²¹⁹

The airborne troops were rounded up and chased away from the airfield, and when the air-landed units arrived they were shot up in the air and on the ground. Although the assault was thwarted in several locations, there was still some success. In Rotterdam, three parachute battalions, supported by 120 men landed on the river using 12 seaplanes, took a bridge critical in supporting German land based troops.²²⁰ In spite of the well-designed resistance, Holland would eventually capitulate after the German bombing of its cities. The Queen and her family, however, were able to escape to England and later Canada for safety.

²¹⁷ Weeks, *Assault from the Sky*, 18.

²¹⁸ Merglen, *Surprise Warfare*, 37.

²¹⁹ Weeks, *Assault from the Sky*, 20.

²²⁰ Weeks, *Assault from the Sky*, 20.

The discussion about German airborne operations in WWII would not be complete without looking at Operation Mercury, the German effort to capture Crete. The airborne invasion of the Italian Island was the culmination of Hitler's Balkan campaign to secure his southern flank while helping his ally Mussolini at the same time. The invasion was also another shining example of the use of General Kurt Student and his airborne forces. However, Crete was also a shining example of the temptation to regularize irregular forces by placing them into conventional campaign situations.²²¹ If any, this operation was the turning point where airborne operations became conventional. The German attacking force included 22,000 men, about half of which parachuted to the island in two waves using 500 Ju52 Junker aircraft.²²² The other half was air-landed nearly eight hours after the initial wave. German casualties in Crete were much higher than expected. The German force was so large they were not able to rehearse the operation and most units were given less than three weeks to prepare. The force defending the island was considerable, "the Allied commander in Crete, had a force of some 42,000 men—British, Greeks, Australians, and New Zealanders—for the most part in the fortified hill positions adjoining the airfields."²²³ Additionally, "German intelligence also made another serious error. They convinced themselves that the Cretans would be friendly, though they had no reason to think so, and indeed the Cretans were anything but. Almost 10,000 of them turned out carrying rifles to join the mainland Greek irregular units in defence [sic] of their homes."²²⁴ While the Germans were ultimately successful in Crete, the cost was significant.

There was no doubt that they had won, but the price had been frightening. Accustomed to quick, cheap victories from the airborne arm, the losses in Crete caused deep thought . . . Out of an

²²¹ Arquilla, *From Troy to Entebbe*, 196.

²²² Weeks, *Assault from the Sky*, 23–31.

²²³ Cajus Bekker, "The Blood-Bath of Crete," in *From Troy to Entebbe: Special Operations in Ancient and Modern Times*, ed. John Arquilla (Lanham, NY: University Press of America, 1996), 211.

²²⁴ Weeks, *Assault from the Sky*, 26.

attacking force of 22,000 men about 5,000, one in four were dead . . . all the gliders and 170 Junkers transports were wrecked completely. About 50 other transports flew back to base but were too damaged to continue.²²⁵

While extensive German successes with airborne operations accumulated, the Allied countries took notice. “Crete marked the beginning of British airborne thinking, it also marked the virtual end of the German . . . they were only ever to undertake minor airborne operations in the future.”²²⁶ By the time the 509th Parachute Infantry Regiment of the U.S. Army was used unsuccessfully in Operation Torch during the invasion of French North Africa in November 1942, airborne operations had grown significantly in both size and scope. The result is the non-customary, unconventional, ways and means became customary and conventional. An irregular capability is never static.

2. Gliders

“Take Fort Eben Emael,” was the order that the *Führer* gave to General Student.²²⁷ When Hitler approached Student about attacking Eben Emael, as an accomplished glider pilot himself, Student had been working on his “concept of three-dimensional warfare in which airborne troops could be inserted behind enemy lines and, using surprise and speed, could attack the enemy where he was least prepared.”²²⁸ Student’s concept was so well received by the *Führer*, that Hitler viewed the idea as his “new secret weapon.”²²⁹ Hitler became extremely fond of glider-borne operations. While critics might label this fondness as irrational or even contrarian in nature, there was a simple yet strategic necessity behind the German use of the gliders in WWII. Simply put, at the beginning of WWII, Germany had a very skilled cadre of glider pilots thanks to

²²⁵ Weeks, *Assault from the Sky*, 30.

²²⁶ Weeks, *Assault from the Sky*, 31.

²²⁷ William H. McRaven, *Spec Ops: Case Studies in Special Operations Warfare* (New York: Presidio Press, 1995), 33.

²²⁸ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 33.

²²⁹ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 33.

the restrictions put in place by the Treaty of Versailles at the conclusion of WWI. In addition, the Nazi leadership was for the most part extremely knowledgeable about the advantages of glider borne operations.

On June 28th, 1919, the Treaty of Versailles formally marked the conclusion of WWI. The treaty strictly limited the German capacity to prepare for or wage war. Particularly hampering to the German *Luftwaffe* were the restrictions which dismantled all military or naval air forces to include handing over all “complete aeroplanes and seaplanes, as well as those being manufactured, repaired or assembled...dirigibles able to take the air, being manufactured, repaired or assembled...engines for aircraft...nacelles and fuselages...instruments for use on aircraft.”²³⁰ In summary, “military aviation was completely eradicated in Germany after World War I.”²³¹ However, since the Germans “retained political sovereignty in the air space over its homeland” they were able to circumvent these restrictions through a deliberate focus on civil aviation.²³²

As an unintended consequence of the severe restrictions levied on German air forces by the Treaty of Versailles, German military pilots now sequestered in the civilian sector, became superbly talented in the operation of gliders. These gliders took advantage of a loophole in the treaty. Civilian glider aircraft were not restrained by the same restrictions and oversight that restricted the use of powered aircraft. After all, what use did non-powered aircraft have in war anyway? Right?

In retrospect, it is interesting to know how the special operations assault on the Fort at Eben Emael had such a significant strategic effect on warfare in WWII. After all, the raid at Eben Emael preceding the German invasion of Belgium was merely a distraction for the *coup de main* which was to involve

²³⁰ *The Treaty of Versailles*, <http://avalon.law.yale.edu/imt/partv.asp> (accessed March 19, 2012).

²³¹ Eugene M. Emme, ed., *The Impact of Air Power: National Security and World Politics* (Princeton, NJ: D. Van Nostrand Company Inc., 1959), 9.

²³² Emme, *The Impact of Air Power*, 9.

“driving three panzer corps through the Ardennes, across the Meuse, and deep into the heart of France.”²³³ A believable move into Belgium was the key to convincing the British and French that the Belgium thrust represented the primary German effort. The mobilization of British and French troops to counter the German breech of Belgium territory would theoretically leave the French flank vulnerable to the German push through the Ardennes. The fort was the “largest single fort of its day” sitting on the high ground (130 feet above the canal) with its many guns protecting not only the Albert Canal, but also the three bridges that offered the only routing across the canal and into Belgium.²³⁴ The plan of action started to take shape.

A group of gliders, taking off at night behind their tow planes, would cast off before the frontier was reached, then split up into four detachments to land silently in the first light of dawn on the three bridges and on top of fort Eben-Emael; there would be an immediate violent attack with grenades, machine-guns, flame throwers and hollow charges to carry out the main mission within a quarter of an hour; finally, the assault parties would dig in on the spot and hold out until the ground troops arrived.²³⁵

The aftermath of the 10 May 1940 German assault on Eben Emael is just as significant as the makeup of the force. “Few military campaigns fought by such a small number of men in such a short time have had such decisive effect. Imagination and conception was coupled to thoroughness in preparation and aggressiveness in execution.”²³⁶ The inclusion of the glider borne forces enabled the airborne forces to attack with surprise. The gliders were able to disconnect from the tow planes before reaching the border, enabling them to enter the airspace quietly with no audible signature. Unlike the traditional airborne forces spread over a large area, the gliders, carrying 9–10 personnel each were able to land on remarkably exact locations that concentrated the raiding forces in each of

²³³ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 30.

²³⁴ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 30.

²³⁵ Merglen, *Surprise Warfare*, 59.

²³⁶ Merglen, *Surprise Warfare*, 65.

the four detachments. The gliders were able to carry greater weights, enabling the German forces to bring more equipment than they would have been able to bring using traditional parachute operations. The planned assault force consisted of 365 personnel along with 2.5 tons of explosives. This package was delivered “into the heart of the enemy position” by 42 gliders.²³⁷ Other critical contributors to German success were intelligence, training and the cohesive nature of the attacking force. The German attackers “obtained blueprints from a German subcontractor who helped build the fort.”²³⁸ Detailed rehearsals were conducted with the entire force. Everyone operated on the same plan, the same information, and the same objectives whether flyers, infantry, or paratroopers resulting in a cohesive and fully organic and integrated raiding package.

After his previous success at Eben Emael, it came as no surprise when Student was summoned to rescue Hitler’s friend and ally Benito “el Duce” Mussolini in the fall of 1943. Mussolini had been dismissed and ordered arrested by the King of Italy who Hitler feared would switch to side with the Allies. To help Student, the *Führer* selected Otto Skorzeny. Although Skorzeny had briefly been assigned to the *Luftwaffe*, he held numerous positions in areas of the military before being placed in charge of a new commando unit formed by Hitler. In spite of several punishments and reprimands along the way, Skorzeny proved his mettle in numerous operations becoming almost “legendary.”²³⁹ Therefore, it was no surprise when Hitler selected Skorzeny to lead the group to rescue to Mussolini. Perhaps the Student/Skorzeny pairing was an airborne special operations match made in heaven, but the unique combination of glider borne attack and commando raiders proved more than adequate.

Skorzeny subsequently went to great lengths confirming the location of the Italian dictator. Coming close several times, only to have Mussolini moved before an operation could be mounted. Skorzeny finally pinpointed his location at an

²³⁷ Merglen, *Surprise Warfare*, 61.

²³⁸ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 43.

²³⁹ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 166.

isolated hotel in Gran Sasso, Italy. With a single way up the mountain to the hotel in Gran Sasso, it quickly became a prime candidate for one of Student's glider style raids. After surveying the target area in a German reconnaissance airplane at twenty-one thousand feet and taking several photographs of the area, Skorzeny decided that "a small triangular shaped meadow adjacent to the hotel would be the best, and possibly the only, place to land his commandos."²⁴⁰ After pitching the final plan, Skorzeny received a reluctant approval from General Student even though the experts claimed that the high altitude would cause eighty percent of the gliders to crash.²⁴¹ The plan was set using just twelve gliders loaded with nine men each for a total of 108 men. Of these, just 26 would actually be members of Skorzeny's commando force, the remainder were sourced from the XI Air Corps under Student.²⁴² The final addition to the plan was "convincing" Gen. Ferdinando Soleti, a high-ranking Italian carabiniere, that he should accompany the Germans on the raid to prevent bloodshed. Skorzeny had received intelligence that some of General Soleti's men were tasked with guarding Mussolini.²⁴³

The raid was executed on September 12, 1943 and was a huge success. Mussolini was safely in custody in less than four minutes without a single shot being fired.²⁴⁴ Skorzeny's pre-mission intelligence had labeled that small triangular patch of grass as the landing zone but in actuality it was nothing more than a short, steep meadow littered with boulders.²⁴⁵ Despite this, the gliders all made a relatively safe landing with the exception of one that crashed killing or injuring all. "The surprise and speed with which Skorzeny's commandos

²⁴⁰ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 177.

²⁴¹ Otto Skorzeny, *My Commando Operations: The Memoirs of Hitler's Most Daring Commando* (Atglen, PA: Schiffer Publishing, 1995), 255.

²⁴² McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 180.

²⁴³ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 180.

²⁴⁴ Skorzeny, *My Commando Operations*, 267.

²⁴⁵ Skorzeny, *My Commando Operations*, 266.

assaulted the hotel, proved to be pivotal to the success of the mission.²⁴⁶ Skorzeny directed his soldiers to clear the boulders from the patch of grass outside the hotel and directed General Student's personal aircraft, a Fieseler Storch aircraft to land there. In perhaps his most daring move, Skorzeny then loaded himself along with Mussolini and the pilot into the aircraft, a two-seat STOL aircraft, to personally ensure that el Duce made it back alive. Dangerously overweight, the aircraft barely made it airborne before the pilot flew both Skorzeny and Mussolini to safety.²⁴⁷

In contrast to the overwhelming success of previous glider raids, on May 25, 1944 Operation Rösselsprung (Knight's Move) proved to be the less so. Riding on a wave of popularity from successful unconventional and high risk missions, once again Major Otto Skorzeny received an order directly from the *Führer*, this time directing him to "Get Tito, alive or dead."²⁴⁸ Hitler had taken a very keen "interest in the operation to capture Tito. It was to be carried out on 25 May, which was Tito's official birthday."²⁴⁹ Led by Marshal Josip Broz Tito, the Bosnian Partisans had disrupted Hitler's aspirations in the region for quite some time. Hitler's interest in the Balkans was very strategic as a major source for natural resources. Since 1941, the "Balkans provided '50% of the petroleum, 100% of the chrome, 60% of the bauxite and 21% of the copper' for the German war machine."²⁵⁰ While Hitler wanted to increase his support for the Eastern Front, the 14 German and 6 Bulgarian divisions committed to the Balkan are had become a drain on his available military resources.²⁵¹ When Skorzeny arrived in Bosnia to begin gathering intelligence on Tito's whereabouts, he was surprised to find that two other German organizations were already competing for intelligence

²⁴⁶ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 182.

²⁴⁷ Skorzeny, *My Commando Operations*, 269.

²⁴⁸ Wayne D. Eyre, "Operation Rösselsprung and the Elimination of Tito, 25 May 1944: A Failure in Planning and Intelligence Support" (master's thesis, Marine Corps Command and Staff College, 2002), 33.

²⁴⁹ Jasper Ridley, *Tito: A Biography* (London: Constable and Company Ltd., 1994), 233.

²⁵⁰ Eyre, "Operation Rösselsprung," 7.

²⁵¹ Merglen, *Surprise Warfare*, 114.

and looking to take action against Tito. Instead of collaboration, this formed a bit of rivalry between Skorzeny and the other two groups, the *Brandenburgers* and another separate reconnaissance and spy division of the *Abwehr*.

When the final plan was set and the order for Operation Rösselsprung issued, Skorzeny would find himself sidelined by Field Marshal Maximilian Freiherr von Weichs. Weichs was the German Army Commander responsible for Yugoslavia and Albania, and had a vested interest the removal of Tito. Intelligence showed that Tito was in the town of Drvar, but intelligence was not clear on where in Drvar, Tito was.

A heavy bombardment of Partisan positions in and around Drvar by *Fliegerführer Kroatien* (Air Command Croatia) aircraft was to precede a parachute and glider assault by 500 SS *Fallschirmjäger* Battalion whose task it was to destroy Tito and his headquarters. Concurrently, XV Corps elements would converge on Drvar from all directions, in order to linkup with 500 SS on the same day, 25 May 1944. Speed, shock and surprise were key for the paratroopers of 500 SS to accomplish their mission.²⁵²

Due to a limited number of gliders, the plan called for 654 troops to be lifted in on gliders during the initial assault. 220 more would parachute in five hours later.²⁵³

In the end, the operation was not as successful as previous glider raids. The initial insertion went as planned. Once on the ground, the failure of intelligence was evident. Although they had come close to catching him, Tito was not where they had expected. After landing and finding their focus was not on Tito's correct location, the ground commander's plan was not flexible enough to adapt. Once on the ground, the glider-borne paratroopers were not able to adjust tactically to attack where Tito and his forces were located, thereby allowing him time to escape. "Parachute troops have their greatest flexibility of movement before dispatch from the aircraft. Once on the ground and executing their tasks, it is a relatively lengthy process to shift them to new objectives, especially when

²⁵² Eyre, "Operation Rösselsprung," 9.

²⁵³ Eyre, "Operation Rösselsprung," 11.

engaged in a fight.”²⁵⁴ Furthermore, the second wave of 220 paratroopers was not well utilized. Their insertion location should have been shifted to complement the tactical situation on the ground, but the initial drop location was never altered. Tito, several members of his staff, and his dog were all able to escape their cave, slipping through floor and down along a steam away from the fighting.²⁵⁵ In the end, Operation Knight’s Move lacked the pinpoint intelligence, the tactical flexibility, and the intense training and rehearsals that we witnessed in the first two glider operations. Ultimately this operation suffered from a lack of the surprise, speed and repetition that William McRaven deems critical in successful mission accomplishment.²⁵⁶ Overall, the German losses in Operation Rösselsprung were minimal, and while they failed to capture or kill Tito, the Germans killed several thousand of the partisans, a significant blow to his force.²⁵⁷ In what was perhaps an unintended consequence of the German airborne operations, “to counter remaining German threats from the air, a Balkan Air Force [BAF] was created on June 1, just a week after the near fatal raid on Titio’s headquarters . . . the BAF consisted of about five hundred combat aircraft, nearly half of them fighters, which precluded any future airborne operations by the Germans.”²⁵⁸

As one stands back and reflects on the German use of gliders as a special operations tool in WWII, a number of trends stand out, both good and bad. First, the use of gliders provided the raiding force with a precise insertion method that allowed commanders to place larger numbers of troops and equipment on a precise spot on the battlefield. This airborne method proved tactically superior to traditional paratrooper operations which often spread troops over a greater area. Traditional paratrooper methods often hampered the speed with which forces

²⁵⁴ Eyre, “Operation Rösselsprung,” 40.

²⁵⁵ Ridley, *Tito: A Biography*, 235.

²⁵⁶ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 8.

²⁵⁷ Arquilla, *Insurgents, Raiders, and Bandits*, 210.

²⁵⁸ Arquilla, *Insurgents, Raiders, and Bandits*, 210.

could gather in mass and attack the objective. Additionally, the glider payload enabled troops to carry more equipment than their paratrooper counterparts, allowing them to sustain operations without reinforcements for a longer period of time. While glider use eliminated the vulnerable drift time under the canopy of a parachute, the glider was a slow and barely maneuverable aircraft highly susceptible to enemy fire.

Second, gliders offered a level of surprise that surpassed paratroop operations. Most aircraft used to drop paratroopers were loud, often warning opponents of the approaching troops. The gliders approached silently and often arrived on the objective before the enemy had been alerted of their presence. The tow aircraft were often able to release the gliders well beyond the limits of enemy surveillance or detection. In a tactic similar to the modern day High Altitude High Opening (HAHO) jumps, gliders were able to release in a permissible airspace and glide into enemy territory quietly.

Third, the Germans placed airborne operations under the control of the *Luftwaffe* (air force). This method of control had both advantages and disadvantages. “The tactical use of German airborne troops was effective because of the close co-operation with the air arm in preparing, supporting and sustaining the air-landings.”²⁵⁹ In most cases, the air force leadership insured that both ground and air forces were aware of the plan of action and were fully involved in rehearsals. This created a well-integrated and extensively rehearsed raiding team. The down side of *Luftwaffe* leadership of airborne forces is a product of air leaders that may not be as knowledgeable and proficient in tactical ground maneuver. The exceptions in this case were the likes of General Student and Major Skorzeny who both appeared to have a good grasp of both air and ground operations.

Finally, the successful integration of both air and land forces using glider tactics frequently led to both surprise and speed which were critical to gaining the

²⁵⁹ Merglen, *Surprise Warfare*, 33.

relative superiority which “exists when an attacking force, generally smaller, gains a decisive advantage over a larger or well-defended enemy.”²⁶⁰ However, with a fairly high success rate in special operations, it is puzzling to note that after the conclusion of WWII, gliders were never again used extensively in combat. This is a trend that will repeat in this thesis, often a capability is extremely successful only to be discarded at the conclusion of the conflict. This pattern of disuse of gliders, in this case, and other forms of specialized air power as well, continues to recur throughout history.

3. OSS

As German forces overwhelmed numerous territories in WWII, not everyone fell in line to obey their Nazi occupiers. The partisan resistance movements began almost as soon as the Germans obtained power. This clandestine struggle of patriots was one of the most heroic achievements in World War II.²⁶¹ Critical to those achievements was the use of air power to support the Office of Strategic Services (OSS). The origins of the OSS trace back to the British Special Operations Executive (SOE) and the Secret Intelligence Service (SIS) which were organized for partisan support in 1940 following “Prime Minister Winston Churchill’s order to rouse resistance against the German army in occupied countries and ‘set Europe ablaze.’”²⁶² Predecessor to the modern Central Intelligence Agency (CIA), the OSS was established via executive order from President Franklin Roosevelt in June, 1942 with former Army Colonel Bill Donovan in charge. Even though William J. “Wild Bill” Donovan’s first combat action was under General Pershing chasing the Mexican outlaw Poncho Villa, his

²⁶⁰ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 4.

²⁶¹ Harris G. Warren, *Special Operations: AAF Aid to European Resistance Movements 1943–1945* (Air Historical Office: Headquarters, Army Air Forces, 1947), 1.

²⁶² John Whiteclay Chambers II, “Office of Strategic Services Training during World War II,” *Studies in Intelligence*, Vol 54, No 2 (June 2010), 2.

most notable experience came during WWI after which he became the first person awarded our country's four highest medals, including the Medal of Honor.²⁶³

Using their "Jedburgh" teams, the OSS was able to influence the success of partisan movements by granting military aid. Air forces were called to "deliver thousands of tons of supplies to the patriots, to infiltrate espionage agents and other personnel, to undertake hazardous landing missions far behind enemy lines, and to drop billions of leaflets over Europe."²⁶⁴ Labeled the "Carpetbaggers," these crews flew missions into occupied Europe from bases in both Britain and North Africa. These "special operations" were flown with specially modified B-17 bombers followed by B-25 bombers and C-47 transports before gaining highly modified all black B-24 bombers.

By the summer of 1944, the Carpetbaggers had expanded to four squadrons with 64 B-24s and five C-47s . . . [which] were used primarily to land at clandestine rough-filed landing zones behind Germans lines in France to insert and recover OSS teams.²⁶⁵

While the analysis of this truly special operation could fill an entire tome on its own, there are several important lessons. The Carpetbagger air forces that flew the missions into Europe were hand selected for involvement with the OSS. They were experienced, well trained and truly an irregular force. While their aircraft were not the newest technologies, they were specially modified for the missions. Of particular importance was the relationship between the aircrews and the forces they were supporting, "The closest liaison existed between the secret agencies and the air forces, and the success of the entire program of special operations depended upon full cooperation."²⁶⁶ Among others, these lessons made this one of the earliest examples of an organized special operations air

²⁶³ Thomas F. Troy, *Donovan and the CIA: A History of the Establishment of the Central Intelligence Agency* (Central Intelligence Agency: Center for the Study of Intelligence, 1981), 24.

²⁶⁴ Warren, *Special Operations*, 2.

²⁶⁵ Michael E. Haas, *Apollo's Warriors: United States Air Force Special Operations during the Cold War* (Maxwell Air force Base, AL: Air University Press, 1997), 5.

²⁶⁶ Warren, *Special Operations*, 14.

force. Along with the Chindit air forces, the Carpetbaggers form the roots of modern day special operations air forces.

4. Chindits

Few, if any, army commanders have had such a significant impact on the development of air power in irregular warfare as British Major General Orde Wingate. It was from Wingate's role in the WWII campaign against the Japanese in Burma that the 1st Air Commando Group traces its origin.²⁶⁷ General Wingate proved his resolve during irregular campaigns in both Africa and the Middle East before being brought to Burma. Wingate's use of long range penetration tactics, using small units to launch deep strikes against one's adversaries, was indicative of the tactics used by T.E. Lawrence in the Arab Revolt.²⁶⁸ But it is also interesting to note that Wingate was a distant blood relative of Lawrence,²⁶⁹ which perhaps helps to explain his interest in both Arab culture/language as well as irregular tactics of warfare. General Wingate, however, "went on much further, for he demonstrated that these methods could also be employed against slippery irregular forces, not only conventional formations."²⁷⁰ Wingate's first Chindit offensive received very little air support. While it was only moderately effective and suffered approximately 30 percent casualties, "it was the only successful offensive action in the China-Burma-India theater during the 1942–43 dry season."²⁷¹ Nevertheless, British Prime Minister Winston Churchill was impressed with Wingate and his theory of long-range penetration groups. As a result, Churchill invited Wingate to board the *Queen Mary* for a trip to Quebec for the Quadrant Conference. It was at the Quadrant conference in Quebec that

²⁶⁷ The 1st Air commando Group is the precursor to the modern day Air Force Special Operations Command (AFSOC).

²⁶⁸ Arquilla, *Insurgents, Raiders, and Bandits*, 175.

²⁶⁹ Leonard Mosley, *Gideon Goes to War* (New York: Charles Scribner's Sons, 1955), 16.

²⁷⁰ Arquilla, *Insurgents, Raiders, and Bandits*, 175.

²⁷¹ A.H. Peterson, G.C. Reinhardt and E.E. Conger ed., *Symposium on the Role of Airpower in Counterinsurgency and Unconventional Warfare: Chindit Operations in Burma* (Santa Monica, CA: Rand, 1963), 1.

Wingate met Franklin Roosevelt. Roosevelt was not as impressed like Churchill was.^{272,273} “But General H. H. ‘Hap’ Arnold, commander of the U.S. Army Air Forces, was deeply drawn to Wingate’s concept of long-range penetration operations and became intent on providing the next expedition—for all this high level attention meant there would be one—with better air support.”²⁷⁴

General Arnold selected Lieutenant Colonels Phil Cochran and John Alison, making them co-commanders of the U.S. Army Air Corps Classified Project Nine. The classified unit was later called 1 Air Command Force and then Number 1 Air Commando Group.²⁷⁵ Arnold’s initiating guidance to Cochran and Alison included, “Wingate has made innovations in ground warfare; I want some in the air. Wingate’s troops walked into Burma. From now on I want them to fly in and I want them to fly out. The U.S. unit to be formed for this mission will have first priority on any equipment necessary to the job.”²⁷⁶

If there was ever an irregular air force, this was it. The unit deployed with about 600 people and 300 airplanes. They received a squadron of P-51A fighter aircraft, a squadron of B-25 Mitchell bombers, C-47 transports, and 100 CG4A gliders that had just come into the inventory. They also employed L-5’s, UC-64 Norseman transports and L-1’s, all smaller transports for medical evacuations and resupply missions to austere landing areas not suitable for larger aircraft. Some of the first helicopters ever to go into combat were also part of the Number 1 Air Commando Group. In addition to some of the best aircraft and equipment, Cochran and Alison took the best people, both pilots and support personnel.²⁷⁷

²⁷² Arquilla, *Insurgents, Raiders, and Bandits*, 185.

²⁷³ Mosley, *Gideon Goes to War*, 210–213.

²⁷⁴ Arquilla, *Insurgents, Raiders, and Bandits*, 185.

²⁷⁵ Peterson, *Chindit Operations in Burma*, 3.

²⁷⁶ Henry H. Arnold quoted in, Peterson, *Chindit Operations in Burma*, 3.

²⁷⁷ Information on equipment and personnel was extracted from: Peterson, *Chindit Operations in Burma*, 3.

The Chindit air forces filled every mission set for Wingate: counterair, interdiction, reconnaissance, transport (air invasion and resupply), and close air support.²⁷⁸

We assumed that our responsibilities were: to keep the enemy air force off General Wingate's back; to create diversions and disrupt enemy communications; to plan the air assault and manage the airfields; to plan and execute the evacuation of wounded; and to provide all logistical support we could with the aircraft under our control.²⁷⁹

That is quite simply what the irregular air forces did. A typical scenario would be executed using a combination of gliders and C-47s. An advance team of Chindits and engineers would be inserted into a jungle clearing via gliders. The mission for this team would be to hold the area while constructing a landing zone large enough to enable the rest of the ground forces to be air-landed via C-47s.²⁸⁰ It is curious to note that Wingate initially had to be persuaded to allow Cochran and Alison to include gliders in the force package, a capability that had yet to be proven in that venue.²⁸¹ Operation Thursday in March 1944 was a great example of actual employment of these tactics. During the initial glider assault, 539 men and 30,000 pounds of equipment were infiltrated onto Broadway landing zone. Once the airstrip had been completed *that night*, 62 C-47 sorties were flown in!²⁸² Over the course of the remaining operation, Wingate's troops were constantly supported by aerial resupply via C-47s and L-5s, medical evacuation via UC-64s and other light airplanes, as well as close air support/interdiction via P-51As and B-25Hs.²⁸³ Over the few short days of Operation Thursday, in addition to thousands of troops and tons of equipment, Wingate received 1360 pack animals transported by both glider and C-47.²⁸⁴

²⁷⁸ Peterson, *Chindit Operations in Burma*, 16–31.

²⁷⁹ John R. Alison quoted in, Peterson, *Chindit Operations in Burma*, 14.

²⁸⁰ Chinnery, *Any Time, Any Place*, 18.

²⁸¹ Christopher Sykes, *Orde Wingate* (London: Collins, 1959), 485–486.

²⁸² Chinnery, *Any Time, Any Place*, 21.

²⁸³ Chinnery, *Any Time, Any Place*, 22–23.

²⁸⁴ Mosley, *Gideon Goes to War*, 240.

The effect the dedicated air support had on Wingate's soldiers was highly beneficial, and definitive to their success on the battlefield. Perhaps the most significant benefit came from the prospect of being medevac'd if wounded in action, a sharp contrast to the grim realities of the previous Chindit expedition. The effect this reassurance had on morale was immeasurable.²⁸⁵ Air commandos were also given the freedom to think outside the box when employing their aircraft in unconventional ways. One such technique was to tear telephone/telegraph poles up out of the ground through the use of a cable and weight hung from the bomb rack of P-51 aircraft.²⁸⁶ The success of Operation Thursday can be measured in part by the sheer volume of the metrics in the operation: 860,000 pounds of supplies (310,000 delivered via glider); 1,500 casualties medevac'd; 50 enemy aircraft demolished, all within less than one month.²⁸⁷

Perhaps no other case in this study will provide such a concise and successful example of a truly irregular ground force mated with air forces designed solely to support the land commander. The success of the Chindit operations in Burma is obvious. "More than thirty Japanese unit commanders who fought in Burma, when interviewed after the war, said, "the raiding force [Chindits] greatly affected Army operations and eventually led to the total abandonment of Northern Burma."²⁸⁸ With limited success in his first campaign, the addition of air forces adequately complimented Wingate's tactics for much greater success in the follow-on operation. "Wingate's tactics were substantially those of guerrilla; yet because he was able to put in so many men in such a short time, it approached a regular operation."²⁸⁹ This was no regular operation from the air but rather an example of a force that was tailor made to support the

²⁸⁵ Chinnery, *Any Time, Any Place*, 23.

²⁸⁶ Chinnery, *Any Time, Any Place*, 23.

²⁸⁷ Chinnery, *Any Time, Any Place*, 24.

²⁸⁸ Arquilla, *Insurgents, Raiders, and Bandits*, 187.

²⁸⁹ Peterson, *Chindit Operations in Burma*, 13.

ground commander for a truly strategic outcome. The air forces remained under the leadership of airmen, yet “were completely integrated into the ground commander’s operation and [they] took an active part in planning the campaign.”²⁹⁰

5. Cargo Cults

In perhaps the most unusual effect of air power, on numerous South Pacific Islands air power has taken the role of religion. The ‘Cargo Cults’ as they are known, “sprang up in the villages in the South Pacific during WWII, when hundreds of thousands of American troops poured into the islands from the skies and seas.”²⁹¹ With the American troops came all sorts of material items that vastly improved the quality of life on these Island villages. These religions, many still in existence, pray that Americans will return and bring with them “radios, TV’s, trucks, boats, watches, iceboxes, medicine, Coca-Cola and many wonderful things.”²⁹² Some Cargo Cults are traced back to the colonial periods; they “exhibited belief in the imminence of a new age of blessing to be initiated by the arrival of a special ‘cargo’ of goods from supernatural sources. The belief was derived from the observation by local residents of the delivery of supplies to colonial officials.”²⁹³ These religions believe that by prayer and ritualistic activities, the cargo will again return to their lands. They clear and maintain landing strips and create bamboo planes and landing towers to bring the cargo back. They often march and hold military ceremonies all for the same goal, bringing the cargo back.²⁹⁴ While somewhat trivial that modern day primitive

²⁹⁰ John R. Alison quoted in, Peterson, *Chindit Operations in Burma*, 14.

²⁹¹ Paul Raffaele, “In John They Trust,” *Smithsonian Magazine* February 2006, www.smithsonian.com (Accessed October 8, 2012).

²⁹² Raffaele, “In John They Trust.”

²⁹³ *Britannica Encyclopedia of World Religions* (Chicago, IL: Encyclopedia Britannica Inc., 2006), 203.

²⁹⁴ Raffaele, “In John They Trust.”

culture could worship American cargo and the aircraft that transport it, this vignette uncovers the real power held by air forces and the resources that they are able to deliver.

B. COLONIAL WARS

During the period between WWII and Korea, there was little involvement of U.S. special operations air units. In fact, the Air Commando units themselves were split up after WWII ended in 1945.²⁹⁵ However, unconventional air power was still used by the Philippine Air Force (PAF) assisted through the U.S. advisor Major-General Edward G. Lansdale. With the addition of the AT-6, the PAF's complement of aircraft was quite similar to that used to assist Wingate, namely C-47s, P-51s, and L-5s. These aircraft conducted a variety of operations, including psychological warfare with leaflets and loudspeakers.²⁹⁶ Despite this lack of U.S. enthusiasm for unconventional air power, other nations developed similar capabilities and utilized them during this period of colonial wars. Of note are the French conflict in Algeria and the British conflict in Malaya.

1. French Colonial Wars – Algeria

The French first landed in Algeria in 1830 in an attempt to stop Algerian piracy on the Mediterranean and subsequently many Frenchmen migrated to Algeria where they became a large portion of the population. By the end of WWII, Algeria was the “crown jewel of the French colonial empire . . . thought of not as a colony but a part of metropolitan France.”²⁹⁷ In fact, during WWI and WWII over 150,000 Algerians died fighting with the French Army.²⁹⁸ French rule over Algeria was relatively stable until 1940. Most unrest could be attributed to political movements, many revolutionary, and later after 1945 some Communist.

²⁹⁵ Chinnery, *Any Time, Any Place*, 57.

²⁹⁶ Chinnery, *Any Time, Any Place*, 58.

²⁹⁷ Corum, *Airpower in Small Wars*, 161.

²⁹⁸ A.H. Peterson, G.C. Reinhardt and E.E. Conger ed., *Symposium on the Role of Airpower in Counterinsurgency and Unconventional Warfare: The Algerian War* (Santa Monica, CA: Rand, 1963), 1.

However, on May 8, 1945, VE (Victory in Europe) Day, the first real rebellion occurred in the town of Setif. The rebellion sparked anti-French riots across Algeria. The rebellious trends would continue intermittently until persistence finally resulted in Algerian independence from France in 1961.

At first, the French treated Algeria like an uprising or a civil war and less of a resistance. As the conflict progressed, the French employed increasingly harsh tactics that only further fueled the resistance. While the French developed many uses of air power in what was essentially a policing action in Algeria, the most significant contribution to air power in this example of irregular warfare was their use of helicopters. The French “employed helicopters in Algeria on a far larger scale and in more varied ways than any armed force was to do before the American intervention in Vietnam.”²⁹⁹ The terrain was very different in Algeria which would distinguish the use of helicopters greatly from the American use later in Vietnam. Vietnam was covered in lush vegetation making helicopter landings often difficult, giving enemy force much cover for ambush and from overhead reconnaissance. In Algeria the terrain was mostly flat, in plateaus or desert. With the exception of the hills on the coast and the central mountains, much of the terrain was level without cover, making surveillance ideal. The helicopter was extremely versatile in this terrain.

They utilized them not just for evacuating casualties but also as gunships and as assault vehicles for carrying troops right into the battle. They made great use of photo-reconnaissance aircraft and of radar . . . The helicopter enabled the French to become more mobile than the guerilla whose main means of transport was on foot. The helicopters could easily stage surprise raids, landing troops within a village and rounding up the inhabitants before they had any idea that they were threatened.³⁰⁰

The French rapidly increased their military presence until the late 1950s when they had approximately 350,000 Army and 40,000 Air Force personnel in

²⁹⁹ Towle, *Pilots and Rebels*, 117.

³⁰⁰ Towle, *Pilots and Rebels*, 117, 123.

country.³⁰¹ In addition to a large contingent of helicopters, the French employed a number of other aircraft in Algeria. Following WWII, they had many newer more modern aircraft like the F-86 Sabrejet, but they were determined not suitable for the conditions faced in counterinsurgency warfare.³⁰² Instead, the French air force utilized many legacy aircraft from WWII including the C-47 and an American trainer, the T-6. The T-6 was chosen because it was slow, sturdy, cheap, could takeoff/land on austere strips, carry an armament, had a long loiter time, and could fly to observe the terrain closely.³⁰³ By January 1959, the French had close to 1100 aircraft in Algeria, of which 222 were helicopters.³⁰⁴ The use of air power in Algeria was so extensive that in addition to the three major air bases in Oran, Algiers, and Bilda, in the eastern part of the Sahara alone, there were 200 runways suitable for light aircraft by the end of 1959.³⁰⁵

The French seem to have benefited very much from a close relationship between ground and air forces that “enabled air support to be provided very rapidly for the ground troops.”³⁰⁶ They used this relationship to establish “barrages” which would equate to the modern day quick reaction forces (QRF). The barrages were stationed in the eastern/western areas of the country and would be airlifted by aircraft or helicopter to answer alarms.³⁰⁷

In the end, the French did a lot of things right militarily in Algeria. Their pioneering and successful use of the helicopter would not be soon repeated, even in Vietnam. Their close coordination with ground forces would prove to be critical in their tactical successes as was their massive deployment of aircraft and airmen in a supporting role. Unfortunately, the conflict ended up in grand political

³⁰¹ Peterson, *The Algerian War*, 13.

³⁰² Corum, *Airpower in Small Wars*, 167.

³⁰³ Corum, *Airpower in Small Wars*, 167.

³⁰⁴ Peterson, *The Algerian War*, 21.

³⁰⁵ Peterson, *The Algerian War*, 23.

³⁰⁶ Towle, *Pilots and Rebels*, 117.

³⁰⁷ Peterson, *The Algerian War*, 73.

failure, and the French gave up their colonial possession. “Algeria is a classic case of winning the battles and losing the war.”³⁰⁸

2. British Colonial Wars – Malaya

During 1948, a communist-supported insurgency arose in Malaya, which at the time was a British colony. A battle for the “hearts and minds” of the people ensued and the British made extensive use of air power for the first time in peripheral conflict.³⁰⁹ At the heart of the insurgency was the Malayan Communist Party (MCP), an indigenous organization founded by members of the Malayan People’s Anti-Japanese Army, a militant organization trained and armed by the British during WWII.³¹⁰ Rather than try to overcome the British through conventional means, the insurgents employed “a classic Maoist guerilla strategy” to which the British successfully responded through asymmetric means of their own, i.e., not with overwhelming artillery and fire power.³¹¹

The phrase “hearts and minds” was coined by the British during the Malayan conflict and was the key descriptive of how they approached this campaign. The RAF entered Malaya still believing that aircraft could play a dominant role in offensive operations, an extension of air control. They soon learned that air power applied indiscriminately would merely destroy the livelihood of the Malayan people. In the words of Major-General Richard Clutterbuck, a British commander during Malaya, “air power is not an end in itself in counterinsurgency. It can contribute only by supporting other agencies – police, army, and government services.”³¹² With this strategy in mind, the British made extensive use of precision bombing for fire support and air mobility for

³⁰⁸ Corum, *Airpower in Small Wars*, 174.

³⁰⁹ Hoffman, *British Air Power in Peripheral Conflict*, 18–39.

³¹⁰ Corum, *Airpower in Small Wars*, 186.

³¹¹ Hoffman, *British Air Power in Peripheral Conflict*, 39.

³¹² Richard Clutterbuck, *The Long Long War: Counterinsurgency in Malaya and Vietnam*, (New York: Praeger, 1966), 156.

troop and supply movements. Air support was “essential” in securing success for the British across both the physical and demographic geography of the Malayan peninsula.³¹³

Precision bombing through jungle foliage is no small feat, and yet the British devised a couple of techniques to improve its efficacy. The first technique was to actually send RAF personnel out on patrols with their counterparts on the ground.³¹⁴ This enabled aircrews to experience first-hand the difficulties of surviving, navigating, and hunting guerrillas in the dense jungle environment and led to the development of the next improvement. With an appreciation of the jungle operating environment, the RAF developed a method to employ ground radar guided weapons directed towards known enemy encampments. This system was first emplaced 5,000 yards from the target, but later advances put patrols as close as just 15 yards outside the target “fixing its precise grid reference.”³¹⁵

Throughout the Malayan Emergency, despite the increased and effective use of precision bombing, “it was the infantryman with his rifle on patrol that accounted for the vast majority of enemy kills.”³¹⁶ This infantryman depended upon air power to support him throughout his patrols and this was accomplished through a combination of airdrop and airland sorties. Airdrops were executed as low as 200 feet to drop zones surround by hazardous terrain and marked by just a single balloon rising through the dense jungle canopy. The general tactic was to make “small and frequent, rather than large and occasional, drops,” resupplying a team along its route of travel rather than a single large drop.³¹⁷ Despite success with airdrop, airland became favored since it eliminated the

³¹³ Hoffman, *British Air Power in Peripheral Conflict*, 40–41.

³¹⁴ Hoffman, *British Air Power in Peripheral Conflict*, 46.

³¹⁵ Hoffman, *British Air Power in Peripheral Conflict*, 47.

³¹⁶ Michael Dewar, *Brush Fire Wars: Minor Campaigns of the British Army Since 1945*, (New York: St Martin’s Press Inc., 1984), 38.

³¹⁷ A.H. Peterson, G.C. Reinhardt and E.E. Conger ed., *Symposium on the Role of Airpower in Counterinsurgency and Unconventional Warfare: A Brief Summary of Viewpoints*, (Santa Monica, CA: Rand, 1963), 4.

necessary expense of parachutes. This is where the capabilities of fixed-wing STOL aircraft, and the Scottish Aviation Pioneer in particular, really shined. These aircraft could carry four or five passengers, or 800 pounds of cargo and still land and takeoff in as little as 150 yards. This ability coupled with the speed and low maintenance when compared to helicopters often made STOL resupply the method of choice.³¹⁸ However, as technology advanced, so would the use of helicopters and they too would become integral to success in Malaya.

When first introduced into the theater, the payload and lift capacity of the underpowered Westland Dragonfly was quite limited compared to the fixed-wing assets available. However, with the introduction of the Whirlwind in 1953, helicopter use rapidly expanded.³¹⁹ Like the STOL fixed-wing, the helicopter was a morale booster as well. Now patrols could cut a landing zone with chain saws and explosives to receive a medevac chopper rather than face an extended evacuation by foot on a stretcher.³²⁰

The helicopter was not without its disadvantages though. The distinctive sound of its rotor blades made surprise almost unobtainable when compared to the near silence of gliders and STOL aircraft. However, even this challenge was overcome when the Special Air Service (SAS) adapted the tree-jumping techniques of American firefighters for use in the Malayan jungle. The concept for this insertion was to drop soldiers from high above the jungle floor. The helicopters would not be out of earshot of the target, but high enough where their destination would be indeterminate. After jumping from the aircraft, the men would then lower themselves through the jungle canopy as far as 200 feet using webbing. This technique was successfully used on multiple assaults with surprisingly few casualties.³²¹

³¹⁸ Hoffman, *British Air Power in Peripheral Conflict*, 49.

³¹⁹ Hoffman, *British Air Power in Peripheral Conflict*, 51.

³²⁰ Clutterbuck, *The Long Long War*, 157.

³²¹ Hoffman, *British Air Power in Peripheral Conflict*, 52–53.

Psychological operations (PSYOPS) were also conducted through extensive use aircraft, both rotary and fixed-wing, for dropping leaflets and carrying loudspeakers. The RAF carried out massive propaganda drives to convince the insurgents to surrender, using immense numbers of leaflets.³²² After learning that many guerillas were forbidden by their commanders to read the leaflet, the RAF started using low flying aircraft with loudspeakers, “Some 70 percent of the guerillas who surrendered said that their decision to do so had been influenced by the ‘sky shouters.’”³²³ Finally, both STOL and helicopters was the “vital service in the ‘hearts-and-minds’ campaign by bringing government services to remote areas.”³²⁴ These flexible modes of transport enabled government officials to access areas that would have otherwise been denied.

Despite these successes, British aircraft procurement throughout the 1940s and into the 1960s was focused on jet powered, technologically advanced aircraft to replace piston-driven aircraft. However, it was these supposedly antiquated aircraft that were the foundation for the success not just in Malaya, but also in other peripheral conflicts in the “mountainous forests of Kenya” and “narrow wadis of the Arabian Peninsula.”³²⁵ Similar to lessons learned by the French in Algeria, RAF officers experienced the advantages of vintage aircraft in a counterinsurgency and the need for “slow speed, long loiter time, and pinpoint accuracy in counter-guerilla operations.”³²⁶ While the RAF learned some of the same technological lessons we’ve found in other cases, they also learned that in a counterinsurgency, political considerations are often as important or more important than military ones. While the case study once again highlighted the extreme importance of close coordination between air and ground forces, the Malayan case study clearly highlighted the importance of closely integrated

³²² Towle, *Pilots and Rebels*, 90.

³²³ Towle, *Pilots and Rebels*, 91.

³²⁴ Hoffman, *British Air Power in Peripheral Conflict*, 50, 53.

³²⁵ Hoffman, *British Air Power in Peripheral Conflict*, 80.

³²⁶ Corum, *Airpower in Small Wars*, 197.

battlefield mobility. In the end, the British were successful in quelling the insurgency in Malaya. While the RAF played a vital role, its true effectiveness was found in close coordination with ground forces.

C. KOREAN WAR

The U.S. military was not adequately prepared for Korea. Post World War II, U.S. air power theory was dominated by nuclear and strategic bombing doctrine. Both air and ground forces faced rapid force reductions. The USAAF in particular was rapidly demobilized in the months following WWII. Personnel strength was reduced from over 2.5 million military and civilian personnel to less than 500,000 during 1947. The number of aircraft in service dropped to a force of just 25,000 aircraft from over 70,000 at its peak. Out of these 25,000 airframes, just 4,750 were actually combat ready and these were scattered throughout the world. By the end of 1946, the USAAF had only two combat ready groups.³²⁷ Irregular capabilities developed by the Carpetbaggers and the Number 1 Air Commando Group were lost when they were both disbanded and decommissioned following WWII. “In the U.S. Air Force, as in the RAF, far greater importance and priority was given to ‘strategic’ air than to ‘tactical’ air.”³²⁸ This philosophy, coupled with the belief that Army ground commanders lacked the required skills for planning air support, led to the Air Force decision to abolish “all joint boards charged with writing doctrine.”³²⁹ What rose up to the top was the focus on nuclear and strategic bombing and the creation of Strategic Air Command (SAC) in 1946 would lay the foundation of theory, doctrine, and strategy which remains deep at the core of the USAF today. Curtis E. LeMay was appointed as Commander in Chief of SAC in 1948 with the dark cloud of the Soviet Union’s rise looming on the horizon. LeMay would serve in SAC for almost

³²⁷ Boyne, *The Influence of Air Power*, 289–290.

³²⁸ Naval Staff History, *British Commonwealth Naval Operations, Korea, 1950–53*, London, 1967, 30.

³²⁹ Jeffrey Grey, “Definite Limitations: The Air War in Korea 1950–1953,” in *The War in the Air: 1914–1994*, edited by Allan Stephens, American Edition (Maxwell Air Force Base, AL: Air University Press, 2001), 149.

nine years, leaving the command to become the Vice Chief of Staff and later Chief of Staff of the Air Force.³³⁰ LeMay's strategic mindset would set the tone for air force doctrine for years to come.

It should come as no surprise that the world (the U.S. in particular) was caught off guard and unprepared, on June 25, 1950 when the first wave of 60,000 North Korean troops stormed across the 38th Parallel before overrunning South Korean capital of Seoul four days later.³³¹ As the U.S. and South Korean forces were pushed back the perimeter established around the southern coastal town of Pusan, it became painfully evident that the U.S. military was unprepared. The newly established U.S. Air Force was caught with a problem that couldn't be solved with nuclear weapons even if delivered by the brand new Boeing B-52 Stratofortress that was under development at the time.³³² This tide was changed, however, with General Douglas MacArthur's Operation Chromite, the amphibious landing of the 1st Marine Division at Inchon to pierce the North Korean line of communication between Seoul and Pusan.

The Korean War saw little use of air power in irregular ways and none of the previous Air Commando units were reactivated.³³³ There were two American airborne operations in Korea, both by the Army's 187th Regimental Combat Team in October 1950 and March 1951.³³⁴ While both operations were large scale conventional operations by conventional forces, they did include two notable firsts. The use of the Air Force Fairchild C-119 marked the first time paratroopers were dropped from a tail-loading aircraft.³³⁵ This change substantially reduced aircraft loading and exit times allowing a much closer

³³⁰ Boyne, *The Influence of Air Power*, 298.

³³¹ Christy, *American Air Power*, 146.

³³² The B-52 was "under development by late 1948, and the first B-52 prototype made its maiden flight on 15 April 1952. Deliveries of the B-52 Stratofortress to SAC began three years later." Christy, *American Air Power*, 144.

³³³ Chinnery, *Any Time, Any Place*, 58.

³³⁴ Merglen, *Surprise Warfare*, 178–182.

³³⁵ Weeks, *Assault from the Sky*, 131.

grouping of paratroopers on the ground. Korea also marked the first time “[large] quantities of heavy support weapons and vehicles had been parachuted in one operation.”³³⁶

Among the largely conventional operations of the Korean War were several isolated irregular uses of air power. During WWII, the U.S. trained more than a quarter million pilots, many of whom remained in the Guard or Reserve. These pilots who were referred to as “retreads” brought significant combat experience to Korea.³³⁷ Brigadier General Harry “Heinie” Aderholt, the officer often credited with being the first modern day Air Commando, was one such retread. Aderholt flew B-17s and C-47s in North Africa and Italy during WWII.³³⁸ After a period of time flying conventional airlift in Korea via the C-47, Aderholt was recruited to establish a special missions detachment with around a dozen pilots and six planes to supporting a “highly classified project involving clandestine operations deep inside North Korea.”³³⁹ “The other use of airborne troops in Korea was the dropping of small parties of sabotage troops who cut railways or shot up designated enemy troop centres (sic) on much the same lines as the SAS had done in the Western Desert or the SOE had done in France.”³⁴⁰ Missions included dropping agents far behind enemy lines, resupply drops, emergency medical evacuation, psychological operations like loudspeaker broadcasts and leaflet drops, and monitoring intelligence signals and reports sent by agents in the field.³⁴¹ For a capability that would be considered irregular even today, the C-47s were modified to hold two 75 gallon napalm bombs under the belly of the transport to drop bombs on lucrative targets found after dropping agents from the aircraft.³⁴²

³³⁶ Weeks, *Assault from the Sky*, 132.

³³⁷ Christy, *American Air Power*, 153.

³³⁸ Trest, *Air Commando One*, 5.

³³⁹ Trest, *Air Commando One*, 29–30.

³⁴⁰ Weeks, *Assault from the Sky*, 132.

³⁴¹ Trest, *Air Commando One*, 32–33.

³⁴² Trest, *Air Commando One*, 33.

Similar to the events that transpired in WWII, air forces created a very versatile and functional irregular capability using available technologies in the midst of a conflict. The air forces were extremely capable and effective in their close relationship held with those they were supporting. However, in a troublesome trend that continues to the present day, the Korean irregular forces were deactivated in 1956 much like they were at the conclusion of WWII.

D. CONCLUSION

The time period encapsulated by this chapter included two very distinct conflicts where air power was successfully applied to irregular warfare: WWII and Korea. Many argue that during WWII, air power began to achieve its full potential. While the regular use of air power was extensive, during this conflict the irregular use of air power was prevalent as well. In Korea, despite a focus on nuclear weapons development and strategic bombing, an irregular air capability was built and employed with much success. At the conclusion of both conflicts, however, irregular air forces were dismantled in favor of shrinking manpower and budget authorizations as well as the realignment to conventionalize the force. In both cases, the disbanded irregular air forces would put the U.S. at an opening disadvantage when the next conflict ensued.

V. AIR POWER IN IRREGULAR WARFARE: FROM THE VIETNAM WAR TO THE KOSOVO CONFLICT

During World War II, the irregular use of air power was unprecedented. While the Korean Conflict itself created a significant dearth of irregular air forces, it was also cast under the shadow of nuclear war. With the nuclear threat on the horizon, the culture of military forces was one of restraint for fear of massive nuclear confrontation. However, as conflict brewed throughout Southeast Asia in the late 1950s and early 1960s, air power would once again emerge as a significant contributor towards irregular efforts throughout the region. The numerous small wars and raids of this time period saw not only vast irregular conflicts, but also a focus on the *coup de main* to an extent not seen since WWII. But in the Vietnam era, U.S. air forces would once again be hampered by the strategic ideals of nuclear warfare. Unfortunately, once these conflicts drew to a close, the familiar pattern of air power disuse was evident once more.

A. VIETNAM

After the French were defeated at Dien Bien Phu in 1954, Vietnam was divided into two nations. Although the U.S. maintained a presence in South Vietnam as early as 1950, U.S. involvement was not significant until late 1960 with the release of President Kennedy's counterinsurgency plan. Kennedy increased the number of U.S. military advisors in South Vietnam from 700 to approximately 16,000.³⁴³ It was Robert McNamara, the Secretary of Defense for Presidents Kennedy and Johnson, who after the Kennedy assassination coined the term flexible response. Flexible response was to render a "balanced combination of conventional forces available that would provide alternatives to deal with aggression . . . the amount of force used by the United States should

³⁴³ Christy, *American Air Power*, 158.

always be commensurate with the threat.”³⁴⁴ Combined with the post Korea nuclear focus, flexible response yielded a very conventional mentality in the U.S. Air Force.

The core of our security planning lies in the maintenance of an effective capability to prosecute successfully a general war . . . In the broad spectrum of conflict called limited war, a variety of responses may be desirable, ranging all the way from a show of force through the delivery of nuclear weapons.³⁴⁵

The views of the air force at the time were perhaps best expressed by General Curtis E. LeMay, commander of Strategic Air Command from 1948–1957 and later AF Chief of Staff:

‘Protracted War’ passed with the advent of the nuclear age. If we are to be successful in preventing war today, we must recognize the radically changed dimension in today’s warfare—the dimension of time. Today, decisive force is already in existence compressed in nuclear weapons stockpiles. It can be applied across the length and breadth of an enemy nation in a few hours, or in a few days at the most by long-range jet bombers.³⁴⁶

The Vietnam War was far from usual. It was a protracted irregular conflict that debunked many of the myths that were linked to nuclear weapons. “There were no front lines. The enemy could be anywhere and everywhere, and was often indistinguishable from the native population.”³⁴⁷ In a trend that would be repeated later in Iraq and Afghanistan a purely irregular conflict was mated with largely conventional forces. Even though the air force approached the conflict with a largely conventional force, steps were also taken to fill the gaps in the conventional force to meet irregular needs.

³⁴⁴ Christy, *American Air Power*, 159.

³⁴⁵ In a statement before the House Armed Services Committee in 1962, Vice Chief of Staff of the Air Force, Frederic Smith is quoted in Corum, *Airpower in Small Wars*, 227.

³⁴⁶ LeMay, Curtis E. “Strategic Air Command and World Peace,” in *The Impact of Air Power: National Security and World Politics*, ed. Eugene M. Emme (Princeton, NJ: D. Van Nostrand Company Inc., 1959).

³⁴⁷ Christy, *American Air Power*, 167.

United States air support in the region began in earnest towards the end of 1960 with several AT-6 Texans followed by pilots to fly the Laotian skies “on their behalf” and Air Commandos to actually train the fledgling Lao Air Force.³⁴⁸ Shortly thereafter, the CIA’s air effort began as well. Although the CIA had been providing covert support on the ground since 1955, the air effort began around April 1961 when a Hmong major in the Royal Lao Army, Vang Pao, was recruited to create what would become “the most effective irregular fighting force in Laos” with over 40,000 guerrilla fighters. Pao’s troops were supported by the CIA’s covert air force of STOL aircraft, Air America, and if a pilot was shot down over Laos his “only hope of salvation was an Air America H-34” helicopter.³⁴⁹ In Vietnam, as Lieutenant General David Burchinal stated, “We were using *them*—the Vietnamese—selling *them* the airplanes and training *them* to fly them. Our involvement was not overtly in combat at that point [the early 1960s], only with our Military Assistance Advisory Group.”³⁵⁰

1. Jungle Jim and Farm Gate

Recognizing the challenge at hand, President Kennedy directed his staff, and Secretary of Defense Robert McNamara in particular, to look for solutions.³⁵¹ Kennedy’s directive had a profound impact on the Air Force’s approach to the counterinsurgency in Southeast Asia. Until this point, “U.S. armed forces were trained and equipped to fight a major land war on the mainland of Europe, with the air force ready to deliver nuclear weapons into the heart of enemy territory.”³⁵² This was a direct result of dismantling much of the special operations capability following WWII and failing to maintain a force dedicated to irregular

³⁴⁸ Chinnery, *Any Time, Any Place*, 64.

³⁴⁹ Chinnery, *Any Time, Any Place*, 65.

³⁵⁰ Richard H. Kohn and Joseph P. Harahan, editors. *Strategic Air Warfare* (Washington, D.C.: Office of Air Force History, 1988), 120.

³⁵¹ Chinnery, *Any Time, Any Place*, 67.

³⁵² Chinnery, *Any Time, Any Place*, 67.

warfare. Only after “direct prodding” did the Air Force establish the 4400th Combat Crew Training Squadron (CCTS) and the subsequent Special Air Warfare Center.³⁵³

The concept of operations for the [4400th] was to train U.S. Air Force crews in aircraft suitable for counterinsurgency; prepare these aircraft for transfer to friendly foreign air forces; provide training to foreign personnel on operations and maintenance of these aircraft; and finally to develop tactics for employment of these aircraft in countering insurgency.³⁵⁴

The 4400th was an all-volunteer force, 124 officers and 228 enlisted in all. Aircraft assigned included 16 C-47s, eight B-26s, and eight T-28s.³⁵⁵ Much like what was done during WWII and Korea, many of the aircraft were specially modified.

The T-28 trainers were modified as a ground attack aircraft with the addition of armor plating, racks for bombs and rockets, plus two fixed forward firing .50 caliber machine guns . . . the modified SC-47 had twice the normal fuel capacity of the normal C-47, was strengthened for operations from unimproved airstrips, and was equipped for rocket assisted takeoffs.³⁵⁶

These Jungle Jim elements, as they were also known as, deployed as part of the Farm Gate project which was begun in the early 1960s to support the development of the South Vietnamese Air Force (VNAF).^{357,358} “While the remainder of the conventional U.S. Air Force developed new jet aircraft and focused on a nuclear-delivery mission, the Farm Gate advisers and the VNAF

³⁵³ Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 331.

³⁵⁴ Corum, *Airpower in Small Wars*, 238.

³⁵⁵ Chinnery, *Any Time, Any Place*, 67–68.

³⁵⁶ Corum, *Airpower in Small Wars*, 245.

³⁵⁷ Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 332.

³⁵⁸ Arthur D. Davis, “Back to the Basics: An Aviation Solution to Counterinsurgent Warfare” (Maxwell Air Force Base, AL: Air University Press, 2005), 12.

continued a campaign of aerial counterinsurgency against an enemy who was becoming increasingly adept at his craft and more competent at defeating aerial threats.”³⁵⁹

The Farm Gate project continued to grow throughout the early 1960s and although American pilots were in the region to ostensibly train their VNAF counterparts, U.S. aviators “were soon flying their aircraft in combat, with the proviso that a Vietnamese observer flew in the back seat.”³⁶⁰ During that first year in combat, Farm Gate pilots developed tactics, techniques and procedures for the employment of their modified aircraft “operating from minimal-condition, tactical airstrips, and the C-47s and T-28s from dirt runways.”³⁶¹

March 1962 led to continued growth within the command with the creation of the 1st Air Commando Group at Hurlburt Field. With this growth, the Air Commandos continued to obtain and modify existing aircraft to meet the needs of each specific mission. Just one example of this was fitting “external wing racks to F-51 Mustangs” to support additional armaments.³⁶² General LeMay, himself, recognized air power’s contributions to irregular warfare outside of concentrated firepower and the success of the program in general.³⁶³ However, despite the Chief of Staff’s remarks supporting this in April 1962, little change was seen in long-standing Air Force doctrine as irregular warfare continued to be viewed as a “lesser, rather than fundamentally different, form of warfare.”³⁶⁴ By the end of 1962, Farm Gate accrued over 4,000 sorties expending over 500,000 pieces of ordnance resulting in over 3,300 enemy casualties and over 4,000 structures destroyed or damaged all in support of the South Vietnamese government. These results were not without casualties among the Farm Gate crews.

³⁵⁹ Davis, “Back to the Basics ,” 12.

³⁶⁰ Chinnery, *Any Time, Any Place*, 69.

³⁶¹ Chinnery, *Any Time, Any Place*, 68–70.

³⁶² Chinnery, *Any Time, Any Place*, 71.

³⁶³ Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 332.

³⁶⁴ Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 332.

Nevertheless, “in 1963 the Air Commandos were to suffer more casualties due to their own defective aircraft than to enemy fire.”³⁶⁵

2. Ranch Hand

Air Commando innovation did not stop with Farm Gate. Operation Ranch Hand was born out of “a joint American/South Vietnamese Combat Development and Test Center, tasked with learning and improving counterinsurgency techniques and tactics.”³⁶⁶ The operation was originally intended to eliminate vegetation as sources of cover and concealment, but was expanded to include food sources used by the enemy as well.³⁶⁷ Ranch Hand made use of C-123 Providers modified with a spray system to deliver defoliant via air. Of the several defoliants used, Agent Orange was by far the most common.³⁶⁸ Although fewer than 6,000 acres were destroyed in 1962, the program grew rapidly and over 1.5 million acres were destroyed during the program’s peak in 1967.³⁶⁹ The risks of Dioxin (the suspected hazardous chemical in Agent Orange) aside, the Ranch Hand flights themselves were far from risk free. In one ten-year period of low-level flying over the jungle Ranch Hand crews “sustained well over 7,000 hits.” One aircraft alone survived over 800 rounds. Ranch Hands actions were rewarded with five Air Force Outstanding Unit Awards, two with valor, and two Presidential Unit Citations.³⁷⁰

The Vietnam War was a period of many other special operations innovations. Among these innovative operations are Waterpump, Spooky, Project Duck Hook, and Operation Kingpin (Son Tay). Although a few will be touched on here, the majority were not in support of irregular warfare.

³⁶⁵ Chinnery, *Any Time, Any Place*, 73.

³⁶⁶ Chinnery, *Any Time, Any Place*, 73.

³⁶⁷ Krepinevich, *The Army and Vietnam*, 210.

³⁶⁸ Chinnery, *Any Time, Any Place*, 73.

³⁶⁹ Krepinevich, *The Army and Vietnam*, 210.

³⁷⁰ Chinnery, *Any Time, Any Place*, 74.

3. Spooky

In 1966, SOF air forces again continued adapting existing aircraft and technology as they altered the battlespace with innovation to introduce the AC-47 “Spooky” gunship.³⁷¹ Based on very successful test results in 1965, the initial purchase order included 26 airframes.³⁷² The Spooky was followed by both the AC-130 Spectre and AC-119G/Ks. Once again, special operations aviators developed TTPs for effectively employing their weapon system literally on the fly. Crews developed methods to account for slant range, airspeed, wind, and gun recoil. Minigun accuracy was such that 400 rounds could be placed in a 31.5 foot circle with just one four-second burst of fire at 4,500 feet slant range.³⁷³ Together these platforms revolutionized “on-call” combat air support. Their massive fire power struck fear in the hearts of the enemy. The Viet Cong even issued “orders not to attack the Dragon, as weapons were useless and it would only infuriate the monster.”³⁷⁴ As a testimony to the lasting contribution of the gunship concept, the AC-130 Spectre H/U platforms have seen extensive use in both Iraq and Afghanistan and the next generation AC-130J is currently in production.

4. C-7 – Assault Airlift

The C-7 Caribou, manufactured by de Havilland as the DHC-4, was one of the most successful aircraft in a line of machines designed to tackle the rough field STOL operations (STOL-RF). “The C-7 possessed a unique combination of modest speed, economy of operation, and [STOL-RF] abilities that gave it offsetting value in the counterinsurgency operations of the Vietnam War.”³⁷⁵ The Caribou exceeded rotary lift performance considerably in its ability to carry heavy loads over great distances. When CH-47s might be limited to just 200 nautical

³⁷¹ Susan L. Marquis, *Unconventional Warfare* (Washington, D.C.: Brookings Institution Press, 1997), 33.

³⁷² Chinnery, *Any Time, Any Place*, 99.

³⁷³ Chinnery, *Any Time, Any Place*, 100.

³⁷⁴ Chinnery, *Any Time, Any Place*, 99.

³⁷⁵ Robert C. Owen and Karl P. Mueller, *Airlift Capabilities for Future U.S. Counterinsurgency Operations* (Santa Monica, CA: RAND Corporation, 2006), 41.

miles, a Caribou would be able to carry the same load for 700 nautical miles.³⁷⁶ Another significant advantage of the Caribou was its ability to land on runways which could be cleared meeting less restrictive standards than those required by its larger cousins the C-123 Provider and C-130 Hercules. These two advantages made the Caribou “enormously valuable” throughout the Vietnam experience,³⁷⁷ at least until the Air Force “forced the army to give up the twin-engined Caribou.”³⁷⁸

The Caribou, along with the C-123 Provider, was the backbone of this class of “assault airlifters,” although this was not necessarily because the Caribou was the best aircraft available for the job. As great a performer the Caribou was, aircraft with better performance, greater useful load and shorter takeoff distances, were being developed. However, the C-7 and C-123 were adopted in favor of others largely due to inertia within the DoD:

The main barriers to acquisition of these aircraft have been the absence of a strong community of advocates within the Air Force and DoD and the differences between the Army’s and Air Force’s visions of what such aircraft should be and should do in light of shifting national defense strategies.³⁷⁹

Despite lessons learned and requirements voiced during more recent engagements in Iraq and Afghanistan, these barriers still exist to this day. A prime example is the continued conflict between the U.S. Army and U.S. Air Force to field “a flexible fleet of smaller transports” versus “diversions of resources away from other core missions,” and an inability field an effective assault airlifter once the last C-7 was retired in the 1985.³⁸⁰

³⁷⁶ Owen, *Airlift Capabilities*, 41.

³⁷⁷ Owen, *Airlift Capabilities*, 40.

³⁷⁸ Marquis, *Unconventional Warfare*, 33.

³⁷⁹ Owen, *Airlift Capabilities*, 44.

³⁸⁰ Owen, *Airlift Capabilities*, 46.

5. Foreign Internal Defense

Foreign internal defense (FID) is important on several levels. First and foremost, the foundational doctrine statement of FID recognized in AFDD3-22 *Foreign Internal Defense* highlights this importance; “FID efforts are most successful when they preclude the need to deploy large numbers of U.S. military personnel and equipment.”³⁸¹ Owen and Mueller assert that FID is important on two major levels. “First, it allows the United States to support states with advice, assistance, and technologies that they probably could not acquire on their own and that, second, it reduces or at least delays the need for direct U.S. involvement against insurgencies where it is effective.”³⁸² According to current USAF doctrine, FID encompasses seven major activities: Facilitate Transfer of U.S. Defense Articles and Services; Assess Foreign Military Aviation Capabilities; Train Foreign Military Forces; Advise Foreign Military Forces and Government Agencies; Assist Foreign Aviation Forces in Mission Execution; Facilitate Force Integration for Multinational Operations; Provide Direct Support to Host Countries.³⁸³ Waterpump was but one example of FID in action during the Vietnam War.

Waterpump was the nickname for Detachment 6, 1st Air Commando Wing that was deployed to train Laotian and Thai pilots on March 5, 1964. In this early FID mission, 66 men achieved “what a regular air force unit would have required 350 men to accomplish. Sixteen C-47 pilots, twenty-six Thai T-28 pilots, nine Lao T-28 pilots and a dozen Air American T-28 pilots were trained, plus various maintenance personnel.”³⁸⁴ As we have witnessed in many of our vignettes, small SOF units are often able to accomplish much, despite their small numbers. As the program continued to succeed, Waterpump was expanded to provide medical assistance to Thailand and Laos as well, reaching as many as 96,000

³⁸¹ Air Force Doctrine Document (AFDD) 3–22, *Foreign Internal Defense*, (2011), 1.

³⁸² Owen, *Airlift Capabilities*, 51.

³⁸³ AFDD 3–22, 6.

³⁸⁴ Chinnery, *Any Time, Any Place*, 95.

Thais in one six-month span.³⁸⁵ By 1966, Air Force special operations had reached its peak with over 6,000 people and 550 aircraft deployed throughout nine countries.³⁸⁶

Project Duck Hook was another FID mission starting in 1964 that trained 38 Nationalist Chinese and 22 South Vietnamese C-123 airmen. “The training emphasised [sic] night low-level and bad-weather missions in mountainous terrain, utilising [sic] three specially configured aircraft.”³⁸⁷ This program was the first Big Safari project led by Lockheed Aircraft Services and included configuring the six C-123Bs with electronic countermeasures and a Doppler navigation system.³⁸⁸

Throughout the Vietnam War, FID, when combined with airlift in particular, was a major component of the overall strategy. Literally hundreds of C-47s, C-123s and C-130s were supplied to the South Vietnamese. “Light planes” and C-123s were transferred to Laos and Cambodia.³⁸⁹ Despite the importance and success of foreign internal defense efforts, “the Air Force has taken a minimal approach to providing airlift support to governments conducting counterinsurgencies.”³⁹⁰ So much so, that FID has all but dropped off of the Air Force Special Operations Command’s list of priorities and the AFSOC squadron dedicated to FID is divesting itself of rotary-wing assets. This decision was made despite the fact that “in the past three decades, U.S. transfers of aircraft to countries engaged in counterinsurgencies have emphasized helicopters.”³⁹¹

³⁸⁵ Chinnery, *Any Time, Any Place*, 95.

³⁸⁶ Marquis, *Unconventional Warfare*, 33.

³⁸⁷ Chinnery, *Any Time, Any Place*, 105.

³⁸⁸ Chinnery, *Any Time, Any Place*, 105.

³⁸⁹ Owen, *Airlift Capabilities*, 52–53.

³⁹⁰ Owen, *Airlift Capabilities*, 51.

³⁹¹ Owen, *Airlift Capabilities*, 53.

6. Civil Air Transport – Air America

It seems strange to think that the roots of Air America stretch all the way back to China. In 1937 Claire Chennault was invited to China by the wife of Chiang Kai Shek “to take on the job of training and organizing the Chinese Air Force on a three month contract at a thousand dollars a month.”³⁹² By 1938, the Japanese controlled much of China while Chennault’s group of pilots, the Flying Tigers, lacked the aircraft to make much of a difference.

It was not until 1941 that the U.S. realized the vital importance of keeping China in the war. Chennault saw his chance to form a real air force, using American fighter planes and pilots. He was allotted one hundred P-40s, already rejected by the British as too obsolete for the war in Europe, and had his plan approved to form an American Volunteer group to fly them.³⁹³

After WWII, Chennault remained in China forming the company Civil Air Transport (CAT) that flew commercial operations all over China. By 1949 the CIA was offering cash advances for operations against the rising Chinese communists.³⁹⁴ Eventually the CIA purchased CAT outright. “Chennault never let on that CAT was thereafter anything but a private airline hauling freight and passengers around Asia.”³⁹⁵ Later as the air arm of the CIA, Air America ran their air operations in Korea and later Vietnam.

After much experience in Korea, it was an obvious choice that Air America would operate in Vietnam. As early as 1953, CAT was operating with the French as they tried to maintain their colonial possession.³⁹⁶ Although “the French air force did not provide low-level fighter escorts,” CAT pilots flew airdrop missions against the Vietminh into Dienbienphu twice daily.³⁹⁷

³⁹² Christopher Robbins, *Air America* (New York: G.P. Putnam’s Sons, 1979), 41.

³⁹³ Robbins, *Air America*, 42.

³⁹⁴ Robbins, *Air America*, 56.

³⁹⁵ Seagrave, *Soldiers of Fortune*, 149.

³⁹⁶ Robbins, *Air America*, 59.

³⁹⁷ Seagrave, *Soldiers of Fortune*, 153.

There was always close coordination between CAT (CIA) and the U.S. Air Force as many CAT pilots were in the AF. In 1959, CAT was officially renamed Air America, and Heine Aderholt was selected to command the squadron based out of Okinawa, Japan that would be responsible for Laos and Thailand.³⁹⁸ Air America aircraft and crews were used to fill a gap in air power capabilities. This is a trend that will repeat itself in OIF/OEF. “This secret war in difficult terrain demanded a particular type of aircraft, and AA acquired a bewildering array of special purpose planes. The most essential, apart from helicopters, were the short takeoff and landing planes known among the pilots as STOL.”³⁹⁹ AA missions were very diverse throughout Laos and Vietnam. They mostly flew a variety of STOL aircraft into crude landing strips on a flattened mountain top or a clearing in the trees. Of all of the STOL aircraft used for these missions, the Pilatus Porter was the star. They would deliver supplies or ammunition, and pick up passengers or wounded. They often did resupply airdrops. They were even known to drop napalm from the aircraft, “Hot soup [homemade napalm] was dropped from two hundred feet, making the plane a sitting target, but it was a very effective weapon. Double thermite grenades were strapped onto the fifty-gallon drums, which were then loaded onto pallets in pairs and pushed out the back of the plane.”⁴⁰⁰ In a testament to how far these aircraft and their crews were pushed, Porter losses from other than enemy fires were deemed unacceptable. Bird Air, another CIA contract air operator, asked Pilatus to assist in the investigation. After the Pilatus chief pilot flew to 16 different landing zones with Bird Air’s chief pilot, he declared:

There is nothing wrong with your planes, your pilots, your techniques or your maintenance. What’s wrong is that out of our 16 landings, only two were on strips that the Pilatus Porter was

³⁹⁸ Trest, *Air Commando One*, 82–83.

³⁹⁹ Robbins, *Air America*, 104.

⁴⁰⁰ Robbins, *Air America*, 133.

designed for. The others were so short, so steep, so tricky or so crooked that it is only a matter of time before an accident happens.⁴⁰¹

Throughout Vietnam, Air Force special operators supported their ground counterparts, both American and Vietnamese. Birddog pilots lived amongst U.S. Army Special Forces providing forward air control.⁴⁰² Commandos trained foreign pilots in true FID style. However, once President Johnson ordered the shift to “a massive bombing campaign” in the form of Operation Rolling Thunder, the counterinsurgency, and air power’s role in it particularly, came to an end.⁴⁰³ Following the Vietnam War, Americans became obsessed with firepower and technology. For every problem, if the answer did not lay in nuclear deterrence, the answer could be found in conventional overwhelming firepower delivered via the air. This is confirmed in a survey of professional air power journals of the period. Besides just a couple of articles, “the Air Force seemed either supremely uninterested in the subject or assumed that, in terms of airpower, protracted revolutionary warfare was just conventional warfare writ small.”⁴⁰⁴ Despite these efforts abroad, and those at home by the Special Air Warfare Center to educate leaders and incorporate insurgency and counterinsurgency into emerging doctrine manuals, a “scant two pages” of lip service was indicative of the true doctrinal emphasis.⁴⁰⁵ Once again, the U.S. Air Force remained ensconced in the doctrine of nuclear and strategic bombing.

Following the Vietnam War, Air Force special operations found itself in a rapid decline. “By 1979 only one air force special operations wing was left, with its squadrons composed of AC-130A Spectre gunships, MC-130E Combat Talons, and CH-3E Jolly Green and UH-1N Huey helicopters.”⁴⁰⁶ This was one of

⁴⁰¹ Seagrave, *Soldiers of Fortune*, 161–162.

⁴⁰² Marquis, *Unconventional Warfare*, 33.

⁴⁰³ Davis, “Back to the Basics ,” 14.

⁴⁰⁴ Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 330.

⁴⁰⁵ Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 333.

⁴⁰⁶ Marquis, *Unconventional Warfare*, 33.

the lowest points in American special operations air power, a claim that would become evident later during Operation Eagle Claw, the failed Iranian hostage rescue attempt also known as Desert One.

7. Air Mobile Forces

Perhaps the most innovative use of air power in IW during the Vietnam War was by the Army, not the Air Force. Not only was the use of heli-borne forces innovative, it was done in a massive scale. In fact, during the Vietnam War with its large heli-borne force, the U.S. Army had the world's third largest air force, trailing only the U.S. Air Force and the air force of the Soviet Union.⁴⁰⁷ While the first helicopters to be used in combat were with the Number 1 Air Commando Group in Burma,⁴⁰⁸ the French later used a rotary wing heavy force in Algeria with success. At the tactical level, the U.S. Army built on French experiences and fundamentally changed how ground units operate. This rotary wing force completely innovated battlefield mobility. However, this fundamentally irregular and innovative form of battlefield mobility would be a failure.

When the Army introduced the Air Mobile Division to Vietnam in 1965, they envisioned a platform that could "fly over enemy held territory to land large bodies of troops in the same way as the parachute units."⁴⁰⁹ The innovative use of helicopters as an air assault technique, "transformed the war. They rescued columns which had been ambushed, evacuated casualties and 'downed' airmen, carried reconnaissance and protected outposts."⁴¹⁰ The Bell UH-1 Huey was the workhorse, carrying ten armed men or their equivalent weight in cargo. In the Army's view, a helicopter air-mobile force, although an innovative concept, was largely seen as a means to support conventional operations versus a

⁴⁰⁷ Frederic A. Bergerson. *The Army Gets an Air Force: Tactics of Insurgent Bureaucratic Politics*, (Baltimore, MD: The Johns Hopkins University Press, 1980), 1.

⁴⁰⁸ Peterson, *Chindit Operations in Burma*, 6.

⁴⁰⁹ Weeks, *Assault from the Sky*, 158.

⁴¹⁰ Towle, *Pilots and Rebels*, 164.

counterinsurgency.⁴¹¹ The large air assault forces forged a capability for battlefield mobility that filled an airlift/air assault gap in air force capabilities.

During the conflict, there were innovations to the basic heli-borne capability that demonstrated its real utility. Heavy lift CH-47 Chinook helicopters capable of carrying 40 armed men or their equivalent weight in cargo, were developed and fielded.⁴¹² Helicopters were fitted with machine guns and rocket racks; the AH-1 Cobra was also developed as a Huey-based helicopter gunship. The helicopter gunship was a fairly effective close air support capability at a time when the Air Force and Army were competing with each other on the development of close air support capabilities.

Amidst all the innovation and fanfare for the air-mobile division, it was still an IW failure. Even though the U.S. forces flew 37 million helicopter sorties during the course of the war, compared with only 1.24 million fixed wing sorties,⁴¹³ the Army failed to utilize the capability as a part of an IW strategy. The helicopter air assault came to characterize the large conventional army almost as soon as it was introduced. During the conflict, the U.S. lost a total of 4,587 helicopters⁴¹⁴ and failed to realize the full potential of the capability. In the years following Vietnam, helicopters would prove more valuable in supporting IW.

B. ISRAELI OPERATIONS

1. Operation Jonathan: Entebbe

On July 4, 1976, after several terrifying days of captivity at the hands of terrorists from the Popular Front for the Liberation of Palestine, Israeli commandos rescued 106 Israeli and non-Israeli Jews. The operation had been planned in less than a week and was a great success, demonstrating Israeli

⁴¹¹ Krepinevich, *The Army and Vietnam*, 122.

⁴¹² John Weeks, *Assault from the Sky*, 162.

⁴¹³ Towle, *Pilots and Rebels*, 157.

⁴¹⁴ Towle, *Pilots and Rebels*, 157.

resolve.⁴¹⁵ Air power in the form of the venerable C-130 was integral to the operation. Jonathan Netanyahu was the mastermind behind the plan and this operation would ensure that he would go down in history as an Israeli hero.

Netanyahu's plan was to employ C-130s to transport Israeli commandos, false-flagged vehicles, and Buffalo armored personnel carriers along with a medical team and other personnel.⁴¹⁶ The raid was carried out with exceptional precision. "Four C-130s flew in radio silence for 2,000 miles at low and medium level, through violent African storms, arriving 30 seconds behind schedule and prepared to land on a blacked-out runway."⁴¹⁷ The first C-130 landed six minutes ahead of the remaining three in hopes of deceiving the Ugandans and terrorists with the false-flagged, official-looking vehicles. The remaining C-130s then landed to deliver the rest of the supporting forces. The deception proved effective and the element of surprise remained on the Israelis' side. Unfortunately, Netanyahu was mortally wounded during the initial assault on the old terminal.⁴¹⁸

Despite losing Netanyahu and suffering several other casualties as well, the operation was an overall success. The C-130s had successfully evaded detection during the route from Israel to Uganda and landed under the cover of darkness, taking the enemy by total surprise. Within just 51 minutes of the first aircraft landing, 106 hostages had been rescued and left Entebbe aboard the first departing C-130.⁴¹⁹

2. Operation Babylon

The abilities of the Israeli Air Force were once again demonstrated on June 7, 1981, when Israeli F-16s flew an unprecedeted low-level infiltration into

⁴¹⁵ R. A. Mason, "Airpower as a National Instrument: The Arab-Israeli Wars" in *The War in the Air: 1914–1994*, edited by Alan Stephens, American Edition (Maxwell Air Force Base, AL: Air University Press, 2001), 209.

⁴¹⁶ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 356.

⁴¹⁷ Mason, "Airpower as a National Instrument," 209.

⁴¹⁸ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 360.

⁴¹⁹ McRaven, *Spec Ops: Case Studies in Special Operations Warfare*, 365.

Iraq. Their mission was to destroy the Osirak nuclear reactor just 12 miles southeast of Baghdad. The Israeli pilots had trained for close to a year, developing tactics to avoid radar detection, both ground and airborne, and training to employ their “dumb” bombs with pinpoint accuracy.⁴²⁰ On the night of execution, “eight F-16s escorted by six F-15s flew 635 miles through Saudi Arabian and Jordanian airspace 100 feet above the desert. They achieved such complete surprise in their destruction of the installation that Iraq was unaware who was responsible until the Israeli government announce the success.”⁴²¹ This operation is an excellent example of how meticulous training can have a direct effect on mission outcome. Much of what is known about the operation is based on conjecture but the results speak for themselves; the Israeli crews all returned home without a single loss. Although Operation Babylon was at the time and remains cloaked in secrecy, planning began as early 1979 and culminated that night in June when Israeli air forces were successful in dealing a serious setback to Saddam Hussein’s nuclear ambitions.⁴²²

In this operation, the forces used were conventional F-16s; however, they trained repeatedly and specifically for this mission, making this operation somewhat special and certainly outside the realm of regular, conventional conflict. Operation Babylon is also an example of how, beginning in the late 1970s and continuing through the Persian Gulf War and even into today, technically advanced firepower delivered by air forces has become the force of choice.

C. OPEARATION EL DORADO CANYON

Operation El Dorado Canyon was, in many ways, the Americans’ version of Operation Babylon. The U.S. task force had to overcome several similar

⁴²⁰ Dennis Drew, “Airpower in Peripheral Conflict: From the Past, the Future?,” in *The War in the Air: 1914–1994*, ed. Alan Stephens, American Edition (Maxwell Air Force Base, AL: Air University Press, 2001), 275.

⁴²¹ Mason, “Airpower as a National Instrument,” 209.

⁴²² Drew, “Airpower in Peripheral Conflict,” 273–275.

challenges, particularly long flight times to reach the target. In the Libyan case, the U.S. was denied overflight by both France and Spain and was forced to route around the south into the Mediterranean, roughly doubling the required flight distance.⁴²³ In contrast to the Israelis, the American strike package was enormous: 24 F-111Fs, five EF-111As, a combination of 28 KC-10s and KC-135s, plus 70 sea-based assets as well. This gorilla package infiltrated 2500 nautical miles in radio silence, penetrated the Libyan air defenses, and struck three separate target areas with just one aircraft lost. The raid itself lasted approximately 11 minutes.⁴²⁴

Although Muammar al-Gaddafi escaped death, El Dorado Canyon demonstrated the tactical effectiveness of air power in less than total war. In the case of El Dorado Canyon, air strikes were the only military option “ever seriously considered” by President Reagan and his staff.⁴²⁵ This progression in the view of air power’s efficacy would shift policy and doctrine for years to come. As Dennis Drew predicted:

Airpower will likely be the weapon of choice to enforce counterproliferation and counterterrorist policies for at least three reasons. First, airpower will often be the only military means capable of striking at the heart of the problem. Second, air strikes generally are over with quickly, creating less exposure and risk to the participants. . . . The third reason that will make airpower the weapon of choice in future is time. . . . Airpower, of all the military forces, is the most time sensitive in terms of both force preparation and mission execution.⁴²⁶

D. CONGO, ETHIOPIA, NIGERIA

Although the American Volunteer Group was disbanded on July 4, 1942, the use of mercenary pilots would continue throughout several peripheral conflicts. One such pilot was Count Carl Gustav von Rosen, “a Swedish

⁴²³ Drew, “Airpower in Peripheral Conflict,” 280.

⁴²⁴ Drew, “Airpower in Peripheral Conflict,” 280–282.

⁴²⁵ Drew, “Airpower in Peripheral Conflict,” 278.

⁴²⁶ Drew, “Airpower in Peripheral Conflict,” 288–289.

aristocrat who made mercenary history of a sort by flying only on behalf of underdogs.”⁴²⁷ In an odd twist of fate, von Rosen’s aunt became the wife of the Air Marshall of the Third Reich, Hermann Wilhelm Göring, but the Count would choose to support the plight of those less fortunate.⁴²⁸

Von Rosen’s mercenary career began prior to WWII when he supported the Ethiopian resistance against Mussolini’s forces. Backed by British intelligence agents, the Count flew numerous missions delivering both medicines and other supplies to the Ethiopian resistance.⁴²⁹ Von Rosen continued to support underdogs when the Soviet Union invaded Finland. However, when his relationship with Göring resulted in his arrest by first the British (after rescuing a Dutch DC-3 from the German assault on Schipol Airport) and then the Gestapo, von Rosen sat out the rest of the War in Sweden.⁴³⁰

Following the War, von Rosen returned to Ethiopia where he assisted in building their air force until 1956 and when events began to heat up in the Congo in 1960, the Count found himself involved there as well.⁴³¹ In order to support his rebellion in Katanga and its attempt to secede from Congo, Moise Tshombe hired mercenary pilots to strike at the United Nations supported Congo forces. Tshombe with his force 200 mercenaries delayed the advance of the 10,000 strong U.N. force.⁴³² During this period, von Rosen found himself supporting the United Nations side as the chief for Transair’s Congo operations. He narrowly escaped death when he was back home in Sweden for business instead of flying the U.N. Secretary General on the night his aircraft inexplicably crashed.⁴³³

⁴²⁷ Seagrave, *Soldiers of Fortune*, 109.

⁴²⁸ Seagrave, *Soldiers of Fortune*, 110.

⁴²⁹ Seagrave, *Soldiers of Fortune*, 111.

⁴³⁰ Seagrave, *Soldiers of Fortune*, 112.

⁴³¹ Seagrave, *Soldiers of Fortune*, 112–113.

⁴³² Seagrave, *Soldiers of Fortune*, 114–117.

⁴³³ Seagrave, *Soldiers of Fortune*, 118.

Von Rosen was certainly not the only foreign pilot contributing to revolutionary efforts throughout Africa. Running guns around the Congo, Nigeria and the breakaway state of Biafra became a means for pilots willing to not ask questions to make a tidy profit. Henry Warton, an American, was just one of these pilots. Super Constellations, DC-6s, and DC-4s were favored for their inexpensive acquisition cost. Flights were generally made at night to avoid the Nigerian Air Force pilots who refused to fly at night.⁴³⁴

E. COLONIAL WARS

The United States and Israel are not the only two nations employing air power during this period. The French and British had colonial wars of their own to fight in an irregular fashion. Each chose distinctive ways to approach the problem set in each of their regions of conflict.

1. British Colonial Wars – Borneo, Aden, Dhofar

Following the conclusion of the Malaya and Kenyan conflicts in 1960, the British entered a brief period of respite from peripheral insurgencies. However, this rest would be short-lived as insurgencies arose in Borneo and Aden.⁴³⁵ At this same time, the British were mirroring the shift in U.S. policy to nuclear deterrence as the backbone for its force structure. Driven by hard economic times, the British government was searching for the most fiscally efficient defense solution. According to Duncan Sandys, the British Minister of Defence in 1957, that solution was nuclear deterrence.⁴³⁶ This fundamental shift in focus, as described in the 1957 White Paper, “meant the replacement of aircraft with strategic missiles, and reliance for dealing with external threats placed on nuclear weapons. . . . Little room was left for allocations for replacement aircraft or nonnuclear contingencies.”⁴³⁷

⁴³⁴ Seagrave, *Soldiers of Fortune*, 119–121.

⁴³⁵ Hoffman, *British Air Power in Peripheral Conflict*, 82.

⁴³⁶ Hoffman, *British Air Power in Peripheral Conflict*, 82.

⁴³⁷ Hoffman, *British Air Power in Peripheral Conflict*, 83.

Unfortunately, despite their efforts to avoid irregular conflict, the British became embroiled within Borneo as Malaya attempted to annex Singapore along with Sabah, Sarawak and Brunei. When rebels seized a Shell Oil Company facility in Seria, the British responded with the Queen's Own Highlanders infiltrated via assault airlifters. A STOL Blackburn Beverley aircraft airlanded 90 personnel into a grass landing strip adjacent to the Shell facility while five Twin Pioneers brought in 60 additional men to the opposite side. Combined against the rebels, these forces made short work of the resistance and rescued the hostages in less than 24 hours.⁴³⁸ Throughout the duration of the conflict, the British mimicked their success in Malaya using helicopters and STOL aircraft. These tactics effectively multiplied their end-strength, enabling the British to counter an insurgent force that always surpassed the size of their own forces.⁴³⁹

The British also made extensive use of STOL Beverleys, Argosy cargo aircraft and Belvedere helicopters during operations in southern Arabia in the mid-1960s. This operation was a turning point for British colonial operations. After 30 of the RAF running police actions in the region, ground forces were increased and command over counterinsurgency and counterterrorism operations was given to the British Army.⁴⁴⁰ Because of the rough terrain, helicopter support became an essential component to operations in the region, although flights were plagued by bad weather, performance and mission limitations. One example of this occurred during Operation Nutcracker. Hampered by weather, the insertion force was delayed and came under enemy fire as well. Mission restrictions prevented the hulking Belvederes from operating under enemy fire and the insertion was essentially placed on hold with men on the ground in harm's way. This delay was finally only resolved after the decision to resume operations went up to the highest levels of RAF command in the

⁴³⁸ Hoffman, *British Air Power in Peripheral Conflict*, 85.

⁴³⁹ Hoffman, *British Air Power in Peripheral Conflict*, 86.

⁴⁴⁰ Hoffman, *British Air Power in Peripheral Conflict*, 88.

region.⁴⁴¹ Ultimately, the British would streamline their command and control structure and successfully expanded helicopter operations throughout the region.

Success during the British campaign in Dhofar “also rested on the tactical mobility of the British and federation forces.”⁴⁴² The helicopter was particularly effective in this venue and was used to deliver assault forces on target, keep them supplied and evacuate their casualties.⁴⁴³

Within the South Arabia campaign, just as in Malaya and Kenya, “the light aircraft and especially the helicopters, were thus invaluable in maintaining troop morale.”⁴⁴⁴ Ultimately, “air power had proved a winning factor in a lost war – a loss that was in no way attributable to the military. . . . Britain had placed itself in the impossible situation of trying to maintain strategic presence in a region from which it had pledged to withdraw in the near future.”⁴⁴⁵

Britain’s experience throughout this period of peripheral conflict demonstrated the absolute utility of the helicopter. Helicopters became the backbone for logistics and support of fielded forces and the British campaign exhibited the need for solid helicopter support.⁴⁴⁶

2. French Colonial Wars – Mauritania, Chad, Libya

The French experience during colonial wars in Chad, Libya and other African nations demonstrated a noticeable shift in doctrine and strategy. Previously, air power played a central role as the executer of control from the air. However, in the late 1970s, this shifted to “an increasing reliance on the air force to project firepower”⁴⁴⁷ The British implemented a model of air policing using

⁴⁴¹ Hoffman, *British Air Power in Peripheral Conflict*, 90–91.

⁴⁴² Hoffman, *British Air Power in Peripheral Conflict*, 86.

⁴⁴³ Hoffman, *British Air Power in Peripheral Conflict*, 106.

⁴⁴⁴ Hoffman, *British Air Power in Peripheral Conflict*, 106.

⁴⁴⁵ Hoffman, *British Air Power in Peripheral Conflict*, 106.

⁴⁴⁶ Hoffman, *British Air Power in Peripheral Conflict*, 111.

⁴⁴⁷ Mark A. Lorell, *Airpower in Peripheral Conflict: The French Experience in Africa* (Santa Monica, CA: RAND Corporation, 1989), 67.

aircraft, and the helicopter in particular, in a supporting role. The French built their force around a foundation of strike aircraft. This reliance, coupled with economics, fostered the development of multi-role aircraft such as the Mirage and Jaguar, both backbones of the French Air Force (FAF) during this time. French airlift assets were “extremely limited”⁴⁴⁸ which certainly played a role in this shift to a strike mindset as well. Despite this, the FAF was not without its own foray into air advising during the conflict between Mauritania and the Polisario guerrillas.

The French supported the Mauritanians with 70 training and equipment advisors along with 20 aviation specialists. The Mauritanians utilized several aircraft configured for COIN operations, specifically Britten-Norman Defenders and Reims F337 Super Skymasters in addition to FAF Transalls and Noratlases.⁴⁴⁹ This effort, however, would not prove to be the norm throughout the region.

The remainder of the 1970s and 1980s saw continued reliance on Jaguars and Mirages to project firepower in Chad and Libya. Although the French made increased use of tactical airlift as their capabilities expanded, the general theme throughout this period is one of conventional assets supporting an irregular conflict. The longer this conflicts persisted, as more troops were deployed, the more conventionalized the conflicts became.

F. DESERT SHIELD/DESERT STORM

The First Gulf War showcased the incredible capabilities of conventional air power in a major combat operation. The air campaign plan was straight out of Warden’s playbook. Focused on strategically paralyzing the Iraqi leadership from the start, and lasting only weeks instead of months, the campaign was designed

⁴⁴⁸ Lorell, *The French Experience in Africa*, 35.

⁴⁴⁹ Lorell, *The French Experience in Africa*, 29.

to specifically target Saddam Hussein's regime.⁴⁵⁰ General Norman Schwarzkopf, the Central Command Commander, harbored certain distrust for special operations forces. Thus, it was no surprise that an irregular warfare effort utilizing the "Kuwaiti resistance within Kuwait was resoundingly rejected."⁴⁵¹ In fact, during Desert Shield and Desert Storm, "special operations across the border into Iraq or Kuwait could only be undertaken with his personal approval."⁴⁵² Despite these restrictions, SOF was able to still contribute to the war effort namely in the form of FID and special reconnaissance missions.⁴⁵³ Special operations air power, however, mostly provided support for direct action missions and CSAR. Perhaps the best summation of how the U.S. Air Force emerged from the Gulf War is how General Charles Horner describes it: "new era warfare."⁴⁵⁴ Any mention of special operations, ground or air based, is noticeably absent in Horner's paper and indicative of a strategic conventional air power focus dominating doctrine once more.

G. KOSOVO

After reaching its "apotheosis" during Desert Shield and Desert Storm, American air power was faced with new challenges precipitated by the fall of the Soviet Union.⁴⁵⁵ Attempting to capitalize on the perceived omnipotence of combat air power, NATO launched Operation Allied Force. The intent of NATO's campaign was "to protect ethnic Albanians in the Serbian province of Kosovo from Serb aggression" as well as put an end to the ethnic cleansing which was occurring.⁴⁵⁶ Air operations were limited in both size and scope. While the NATO

⁴⁵⁰ Patrick Hine, "Air Operations in the Gulf War" in *The War in the Air: 1914–1994*, edited by Alan Stephens, American Edition (Maxwell Air Force Base, AL: Air University Press, 2001), 340–341.

⁴⁵¹ Marquis, *Unconventional Warfare*, 230–231.

⁴⁵² Marquis, *Unconventional Warfare*, 231.

⁴⁵³ Marquis, *Unconventional Warfare*, 234.

⁴⁵⁴ Charles A. Horner, "New Era Warfare" in *The War in the Air: 1914–1994*, edited by Alan Stephens, American Edition (Maxwell Air Force Base, AL: Air University Press, 2001), 361.

⁴⁵⁵ Boyne, *The Influence of Air Power*, 361.

⁴⁵⁶ Boyne, *The Influence of Air Power*, 362.

commander, General Wesley Clark, wanted to expand the operation with “more air resources, and a ground campaign capability as well,” NATO allies insisted on a “gradualist approach” and he was denied such support by the Clinton administration.⁴⁵⁷

Despite these challenges, there was some use of special operations forces during Operation Allied Force. The 7th Special Operations Squadron from RAF Mildenhall, UK conducted the largest PSYOP leaflet campaign since WWII. These crews flew 52 missions in just 79 days, dropping over 101 million leaflets. Success of the campaign was measured by local news reports from the drop targets.⁴⁵⁸ Ultimately, the Kosovo campaign would be considered another example of omnipotence of combat air power thoroughly relegating air support for irregular operations to the back burner once again.

H. CONCLUSION

The era encompassing the Vietnam War through Kosovo was one that started out with a promising growth in irregular air power innovation. However, once the Vietnam War became largely conventionalized, air power once again fell into disuse in regards to irregular warfare. The Air Force was “dominated by ‘bomber generals’ for generations, from the very first Chief of Staff, General Carl A. Spaatz, in September 1947, down through the ninth chief, General David C. Jones, in 1974.”⁴⁵⁹ Despite lessons learned during Malaya and efforts in the early years of Vietnam, air power could not overcome this inertia.

As demonstrated by the British in Malaya, there are effective counterinsurgent strategies, and airpower can play a significant role. The importance of airpower may go far beyond that achieved by the British because so many of the problems they faced have been overcome by technology. However, even the most powerful and sophisticated airpower employment will come to naught if it is

⁴⁵⁷ Boyne, *The Influence of Air Power*, 362–363.

⁴⁵⁸ Jerry L. Thigpen, *The Praetorian STARShip* (Maxwell Air Force Base, AL: Air University Press, 2001), 456.

⁴⁵⁹ Boyne, *The Influence of Air Power*, 352.

not applied as part of a comprehensive military/nonmilitary strategy designed to combat the peculiarities of Maoist-based insurgencies.⁴⁶⁰

This lesson was lost on leadership during this era and reinforced by conventional, and at least in the eyes of the Air Force, air power led, success in both the Gulf War and Kosovo.

⁴⁶⁰ Drew, "Airpower in Peripheral Conflict," 291.

VI. AIR POWER IN IRREGULAR WARFARE – FROM 9/11 TO THE PRESENT

Relatively speaking, the history of air power is short in comparison to other forms of warfare. Within that relatively short history, the modern period from September 11, 2001 to the present is distinct. What makes this period distinct is the unique marriage between large conventional militaries and high tech, precision technology mounted against irregular enemies.

In many cases where air power is used in an irregular manner, the mission or capabilities are also classified. Many of the vignettes discussed in previous chapters were written based off of accounts and reports that had been declassified in the years that followed. Case studies like the WWII Carpetbagger support of the OSS Jedburgh teams in Europe and U.S. Army Air Forces Classified Project Nine to support Orde Wingate's Chindits are both prime examples. Even in the current operational environment, rich with media and free flowing information, there are undoubtedly classified examples of the irregular use of air power waiting to be discussed in the years to come.

This chapter will focus on the unclassified examples, cases where air power has once again been used in irregular warfare. Since September 11, 2001, many militaries have found themselves continuously operating in both Iraq and Afghanistan. For the U.S. military, this time period was characterized by extremely high operations tempos, but matched with increasing (until recently) budgets for both people and equipment.

A. OPERATION ENDURING FREEDOM

The attacks that targeted the World Trade Center, Pentagon, and White House on September 11, 2001 initiated a sequence of events which included the end of Taliban rule in Afghanistan, the overthrow of the Saddam Hussein regime in Iraq and the death of Osama bin Laden, during all of which air power played a significant role.

1. 9/11 to Anaconda

Shortly after 9/11, U.S. Army Colonel John Mulholland, the commander of the Fifth Special Forces Group, gathered his troops to give a one sentence briefing, “Gentlemen, you have been selected to infiltrate Afghanistan.”⁴⁶¹ Under those marching orders, starting on October 19, Task Force Dagger began infiltrating teams of Army Special Forces (SF) soldiers and Air Force combat controllers (CCT) into Afghanistan via Army MH-47 Chinook and AFSOC MH-53J Pave Low helicopters.^{462,463} Landing zones were marked by small Central Intelligence Agency (CIA) teams who infiltrated Afghanistan beginning on September 26. The CIA’s mission was to contact members of the Northern Alliance and they brought with them large amounts of currency to fund the operation.⁴⁶⁴ Each SF team was comprised of an Operational Detachment Alpha (ODA), normally 12 men, and one or two Air Force CCT.⁴⁶⁵

This was something of a first, perhaps a milestone in Army/Air Force cooperation. Pairing SF and CCT essentially positioned an AF liaison with each ODA and provided almost unparalleled coordination at the tactical level. “These Army SOF troops, with their attached Air Force terminal attack controllers, would provide the first eyes on target for enabling what eventually became a remarkably successful U.S. exercise in air-ground cooperation.”⁴⁶⁶ While the AF command and control still resided at the Combined Air Operations Center (CAOC) at Prince Sultan Air Base (PSAB) in Saudi Arabia, AF CCTs provided an effective liaison between the supported ground forces and the airborne assets

⁴⁶¹ Lieutenant General John Mulholland Jr. is the current deputy commanding general of U.S. Special Operations Command. As a colonel, General Mulholland was quoted in, Linda Robinson, *Masters of Chaos: The Secret History of the Special Forces* (New York: PublicAffairs, 2004), 154.

⁴⁶² Bruce R. Pirnie, Alan Vick, Adam Grissom, Karl P. Mueller, and David T. Orletsky. *Beyond Close Air Support: Forging a New Air-Ground Partnership* (Santa Monica, CA: RAND Corporation, 2005), 51.

⁴⁶³ Lambeth, Benjamin S. *Airpower Against Terror: America’s Conduct of Operation Enduring Freedom* (Santa Monica, CA: RAND Corporation, 2005), xviii.

⁴⁶⁴ Pirnie, *Beyond Close Air Support*, 51.

⁴⁶⁵ Pirnie, *Beyond Close Air Support*, 51.

⁴⁶⁶ Lambeth, *Airpower Against Terror*, xviii.

along with their command and control. The principle responsibility of these teams was to call in air strikes against Taliban forces, especially those in contact with friendly forces.

The Afghans watched in wonder as the Special Forces soldiers set up their secret weapon, a dark gray box called a laser target designator, and pointed its lens toward the Soviet-made tanks and artillery. Its laser marked the target and the range finder calculated the distance. The men on the ground called on the satellite communications to the unseen pilots in the sky and to their intermediaries, who were sitting in Saudi Arabia thousands of miles to the south.⁴⁶⁷

The support provided by air assets fulfilled several roles. “Supplies were air-dropped when weather permitted, and jet fighters were placed on alert to bomb targets as the men on the ground called for them.”⁴⁶⁸ Additionally, air power was used in humanitarian roles; to counter bin Laden’s propaganda, the U.S. demonstrated its friendliness toward the Afghani population by air-dropping humanitarian daily rations.⁴⁶⁹

The successful integration of SOF with air power and the Northern Alliance, was a huge success. In a short time, Mazar-e Sharif, Kabul, and Kandahar all fell, demoralizing the Taliban and effectively ending their rule.⁴⁷⁰ “The Taliban fled in the face of the binational cavalry and the awesome power of U.S. air support. No one had ever imagined that fewer than one hundred Special Forces soldiers and an indigenous militia could overthrow a government so quickly.”⁴⁷¹ By early 2002, the clear success of SOF in an unconventional setting yielded to conventional forces that began to take charge of the overall military effort.⁴⁷²

⁴⁶⁷ Robinson, *Masters of Chaos*, 157.

⁴⁶⁸ Robinson, *Masters of Chaos*, 157.

⁴⁶⁹ Pirnie, *Beyond Close Air Support*, 48.

⁴⁷⁰ Pirnie, *Beyond Close Air Support*, 49.

⁴⁷¹ Robinson, *Masters of Chaos*, 158.

⁴⁷² Robinson, *Masters of Chaos*, 177.

2. Anaconda to Present

The beginning of OEF saw conventional air forces used to support irregular ground forces. The air missions were largely conventional, but their support to irregular ground forces was notable. In contrast, the large scale introduction of conventional troops to Afghanistan, brought with it changes to the tactical impact air power had on the battlefield. In the first several months of OEF, the Taliban presented coalition forces with targets that were very conventional. With their defeat in numerous major Afghan cities and finally in Operation Anaconda, the Taliban settled for a guerrilla and insurgent style of warfare which mated nicely with Osama bin Laden and the al Qaeda style attacks. “Al Qaeda forces proved far more elusive than the Taliban, and the U.S. achieved less-decisive results against them. The formula for success against the Taliban, i.e., indigenous forces supported by air power, produced disappointing results against al Qaeda.”⁴⁷³

In March 2002, Operation Anaconda placed both conventional and SOF forces on the battlefield along with Afghan forces in the Shah-i Kot Valley. Located in the mountains to the west of Khowst, the Shah-i Kot Valley was the suspected encampment of both Taliban and al Qaeda forces. The lessons learned in the previous months were all but forgotten, when the Combined Joint Task Force was assigned to the 10th Mountain Division. “Operation Anaconda was the first large-scale conventional operation involving U.S. forces in Afghanistan.”⁴⁷⁴ In fact, Operation Anaconda marked the end of OEF for much of the Army’s 5th SF Group.⁴⁷⁵

The plan for Anaconda was a version of the traditional “hammer and anvil” strategy which uses a mobile unit (hammer) to smash the opposing force up against a larger stationary force (anvil). In this case, the Afghan forces under Zia Lordin, paired with SOF elements, would sweep through the valley forcing the

⁴⁷³ Pirnie, *Beyond Close Air Support*, 49.

⁴⁷⁴ Pirnie, *Beyond Close Air Support*, 54.

⁴⁷⁵ Robinson, *Masters of Chaos*, 181.

militants up against the wall created by U.S. forces, mainly the soldiers from the 101st Airborne Division who would air assault into the valley via rotary wing lift. The operation did not go according to plan. U.S. and Afghan forces met opposition much stronger than the 200 fighters predicted. The forces from the 101st came under heavy fire and the Afghan forces retreated after an AC-130 gunship inadvertently attacked their lead element.⁴⁷⁶ Even though the CJTF leadership neglected to address the need for CAS in their planning, the opposition was ultimately overcome by air strikes, the heaviest of the war.⁴⁷⁷

While not necessarily an irregular use of air power, the Operation Anaconda vignette yields a number of poignant lessons. First, this case could be used to argue against the rationale that more is always better. We found this logic false when large numbers of conventional troops were introduced to Vietnam and the lesson repeated itself in Operation Anaconda in Afghanistan. More troops do not guarantee success. Perhaps this is what the great irregular warfare leader T.E. Lawrence meant when he said, “the smaller the unit, the better its performance.”⁴⁷⁸ Second, coordination between services is critical. In Anaconda the air component was not addressed at any level of planning. In the end, it was CAS that was decisive. Last, there were friendly fire incidents that could have been prevented with better coordination. The benefits of using CCT in coordination with SOF cannot be overstated, yet there is still a layer of separation between the supported forces and the supporting forces. As long as there is a layer between the two, air power may not be at its most effective.

As forces in Afghanistan grew more conventionalized, additional lessons were learned regarding the makeup of the force. Many conventional force strategies for irregular warfare center around the idea that IW is a lesser form of conflict. A lesser form of conflict insinuates that it should be easier to counter and

⁴⁷⁶ Pirnie, *Beyond Close Air Support*, 54.

⁴⁷⁷ Pirnie, *Beyond Close Air Support*, 50.

⁴⁷⁸ T.E. Lawrence, *Seven Pillars of Wisdom: A Triumph* (New York: Anchor Books, 1991), 136.

that a force outfitted for conventional conflict is also outfitted for irregular conflict. Unfortunately, “while surgical air strikes can take out command and control centers, oil production facilities, and so forth, they cannot extinguish an international extremist Muslim conspiracy that seems to support, actively or passively, the terrorist movement.”⁴⁷⁹ When Taliban and al Qaeda resorted to insurgency and guerrilla hit and run tactics it highlighted certain gaps in the conventional force. When specifically applied to air forces, many of these conventional force gaps for irregular warfare were repeated in Iraq as well.

In 2010, at the request of the USAF, RAND produced a monograph entitled, *Courses of Action for Enhancing U.S. Air Force “Irregular Warfare” Capabilities*, “to assist U.S. Air Force leadership in choosing ways to enhance Air Force capabilities and capacities for irregular warfare (IW).”⁴⁸⁰ The project looked at ongoing operations (at the time) in both Iraq and Afghanistan and detailed shortfalls emerging from operations that should be addressed. After more than ten years of continuous combat operations, these shortfalls were generated from irregular demands that the conventional force was either unable or unwilling to meet.

First, the RAND report recommends that the USAF develop and procure light cargo aircraft. The previous vignettes of this thesis are peppered with examples where a light cargo aircraft capable of operating on small austere landing zones has been critical to irregular warfare operations.

The Air Force could consider operating a transferable light cargo aircraft (aircraft in the 3,000- to 6,000-pound payload range) to help Iraq and Afghanistan reinforce and extend governance to remote and/or undergoverned regions with locally unobtrusive platforms (the more unobtrusive U.S. presence becomes, the better for the legitimacy of the local government in the eyes of the population).

⁴⁷⁹ Boyne, *The Influence of Air Power*, 364.

⁴⁸⁰ Richard Mesic, David E. Thaler, David Ochmanek, Leon Goodson. *Courses of Action for Enhancing U.S. Air Force “Irregular Warfare” Capabilities: A Functional Solutions Analysis* (Santa Monica, CA: RAND Corporation, 2010), iii.

These aircraft could support distributed U.S. and partner military operations, including resupply and medical evacuation.⁴⁸¹

This gap in air force capabilities has become evident with the expansion of contract air forces. During the conflicts in Iraq and Afghanistan, the contract air business exploded. Companies such as DynCorp International, Avenge Inc, Flightworks Inc, and Presidential Airways have all reaped the benefit of the increased requirements for intelligence, surveillance, and reconnaissance (ISR) as well as combat airland and airdrop platforms that the air force cannot meet with its current assets. Second, the RAND report recommends the AF provide transferable, counterinsurgency-dedicated close air support and armed overwatch platform.

The USAF is considering fielding a to-be-determined OA-X counterinsurgency-dedicated CAS platform that would provide light attack and ISR capability in support of U.S. and partner ground forces, but that could also be transferred as needed to the Iraqi and Afghan air arms. Such a dedicated counterinsurgency platform would help ensure persistent presence and engagement with Iraqi and Afghan partners while lowering operating costs and reducing the excessive flying-hour demands for high-performance aircraft such as the F-16. Transferability would depend on the platform's flexibility, sustainability, ease of maintenance, and interoperability with U.S. and Coalition forces.⁴⁸²

Once again, the current force is lacking in this area. A small tactical CAS platform that is closely coordinated with the supported force, is indispensable. The small low cost platform is easy to field and provides the ground forces with the overwatch, longer station times, and tactical firepower desired. Last, the RAND report recommends the AF add more combat aviation advisors.

First, as the Iraqi Air Force and Afghan Air Corps continue to expand, there will be an increasing need for advanced tactical training that enables Iraqi and Afghan rotary- and fixed-wing aircrews to conduct sophisticated air-ground operations. This is an area in which combat aviation advisors excel and to which they

⁴⁸¹ Mesic, *Courses of Action*, 23.

⁴⁸² Mesic, *Courses of Action*, 23.

bring specialized training skills. Thus, the demand for combat aviation advisors can be expected to grow.⁴⁸³

Several attempts were made to field such a platform, but contracting issues and a lack of buy-in from Air Force leadership has led these half-hearted attempts to failure. Additionally, despite this report combat aviation advising remains one of AFSOC's lowest priorities and support, especially rotary-wing, has actually been cut rather than expanded.

B. OPERATION IRAQI FREEDOM

In March 2003, when the United States invaded Iraq, there was no question what the force would look like. With the conflict in Afghanistan two years old, conventional forces were already taking foot in theater. With the “Left Hook” of Desert Storm still a distant memory for planners, the plans for “Shock and Awe” were formulated. Air Force leaders still had visions of Colonel John Warden’s Five Ring model and strategic paralysis which patterned much of their planning. “Unlike Afghanistan [until March 2002], Iraq would be fought mostly with conventional forces, but the Pentagon’s civilian leadership pressed for it to be fought as innovatively as possible”⁴⁸⁴ While operations in Iraq were largely addressed with conventional forces, the threat evolved. There was a distinct change in the flavor of the opposition in May 2003. On May 1, 2003 on board the aircraft carrier *USS Abraham Lincoln* and against the backdrop of a large banner stating “Mission Accomplished,” the President of the United States, George W. Bush, announced “major combat operations in Iraq had ended.”⁴⁸⁵ It was after that point that that nature of the opposition changed from a conventional opponent to an active insurgency.

⁴⁸³ Mesic, *Courses of Action*, 26.

⁴⁸⁴ Robinson, *Masters of Chaos*, 190.

⁴⁸⁵ George W. Bush, *Decision Points* (New York: Crown Publishers, 2010), 257.

1. Regime Change

In the short period of combat operations that preceded the “Mission Accomplished” announcement, air power was used in a very conventional way. Conventional forces were used to destroy or cripple conventional targets. Unlike Desert Storm, Saddam Hussein was the target in 2003. Regime change was a priority. But much like Desert Storm, Iraqi Scud missiles were a serious concern. As a result, many of the Army SF ODA teams that were so successful in Afghanistan were asked to operate in Iraq. “Their success in Afghanistan had led the conventional military to appreciate what they could do.”⁴⁸⁶ The plan to prevent Scud launches was simple, find the Scuds and call in air power to destroy them. SF accomplished a similar mission during Desert Storm from which they learned several lessons. Among these was the fact “that the Scuds could not be identified and stopped by air power alone and that the ground force had to be mobile, stealthy, and large enough to cover all the territory from which missiles might be fired.”⁴⁸⁷ Conventional air forces in the form of F-16s, A-10s and B-52s were “on call in the western desert twenty-four hours a day. If Special Forces spotted a target or got into trouble, they would call on their friends in the sky. A fleet dedicated to the western desert was vital for the quick reaction needed to prevent missile launches.”⁴⁸⁸ While the regime fell rather quickly, a rather obvious result of conventional military dominance, combat operations were far from over.

2. Ugly Baby

Operation Ugly Baby was the brainchild of Colonel Charlie Cleveland, the commander of the 10th Special Forces Group in early 2003 at the beginning of Operation Iraqi Freedom (OIF). Hampered by diplomatic concerns with the Turks, Cleveland was forced to devise a method to infiltrate his 5,200-man task force

⁴⁸⁶ Robinson, *Masters of Chaos*, 193.

⁴⁸⁷ Robinson, *Masters of Chaos*, 194.

⁴⁸⁸ Robinson, *Masters of Chaos*, 197.

into northern Iraq. However, with six MC-130H Combat Talon IIs, Task Force Viking successfully performed what has been called “longest infiltration by Combat Talons into enemy territory in special operations history.”⁴⁸⁹ The aircraft were forced to fly low level by virtue of flying at emergency/wartime max weights, airframe performance and weather conditions.⁴⁹⁰ Flying extended low levels, blacked out, against a sophisticated integrated air defense network is the one mission above all others which Combat Talons and their crews are specifically designed to execute. Utilizing this high level of equipment and personal skill, of the six, only one aircraft received debilitating damage from enemy fire and was forced to divert to Incirlik, Turkey.⁴⁹¹ The team successfully infiltrated over 200 operators and task force personnel. The following day, the Turks opened up their airspace to allow the remaining personnel to be flown in directly from their forward staging base in Romania.⁴⁹²

Ugly Baby remains as an excellent example of using air power platforms for their intended design and purpose. Combat Talons were designed with this type of mission in mind, and they excel where other “slick” C-130s or tactical airlifters would fail. Unfortunately, these platforms also fell into disuse when they began performing missions that could be accomplished by a less sophisticated airframe at a much-reduced operating cost.

3. Insurgency

Once major combat operations were “concluded” in Iraq in May 2003, the United States was confronted with an unexpected insurgency. In what became a “war of convoy ambushes and car bombs,” the insurgent forces focused on asymmetric tactics.⁴⁹³ The pressure felt by the convoys transporting troop

⁴⁸⁹ Robinson, *Masters of Chaos*, 298.

⁴⁹⁰ David Harris, Interview, October 12, 2005, (Fort Leavenworth, KS: Combat Studies Institute, 2005), 12.

⁴⁹¹ Harris, Interview, 8.

⁴⁹² Robinson, *Masters of Chaos*, 299.

⁴⁹³ John Pike quoted in, Davis, “Back to the Basics,” 5.

supplies overland led to a development of an intratheater air network. Although airlift could not relieve even a majority of the supply transportation needs of the massive conventional ground force, any amount of convoy reduction lessened the significant risk-to-life of the overland supply routes.⁴⁹⁴

Throughout the insurgency period of the Iraq War, mostly conventional air, and ground, assets were used to support the counterinsurgency efforts. F-16s, F-15s, F/A-18s, A-10s, and AC-130s, along with helicopter gunships, provided the majority of close air support to both Special Forces units and conventional ground units engaging insurgents on the ground.⁴⁹⁵ In this manner, high technology, multi-role assets with high operating costs were often utilized to conduct missions outside of their original design. There is certain amount of innovation and flexibility clearly visible here. What is not visible is a legitimate attempt over the 11 years since 9/11 to find a cost effective solution for supporting fires needs in support of ground troops conducting counterinsurgency operations. Unlike Vietnam, there was no drive to modify existing low-tech aircraft or design new aircraft to specifically meet the counterinsurgents need for fire support. Perhaps this is really no surprise since, in the Iraq insurgency at least, the fight was met by unconventional and conventional ground units conducting what could be called hyper-conventional direct action operations. Another example of how low-intensity conflict, irregular warfare, and unconventional warfare are still viewed by the defense establishment as simply lesser forms of major or high-intensity conflict.

On the ISR support side of things, however, there was some innovation. In this case, currently available, low-tech aircraft were modified to provide ISR to the counterinsurgent. AFSOC's U-28 program and the Liberty Program that converted Pilatus PC-6s and King Air 350s, respectively, into highly capable ISR platforms are excellent examples of adapting to the needs of the current conflict.

⁴⁹⁴ Davis, "Back to the Basics," 6.

⁴⁹⁵ Davis, "Back to the Basics," 6.

Much like in Afghanistan, this was also an area of large growth in the use of civilian contract air support.

C. OTHER USES

1. Intelligence, Surveillance and Reconnaissance

Extensive airborne surveillance in powered aircraft dates back to WWI. Before that, lighter-than-air balloons were used to spy on enemy movements in the American Civil War. As a result, intelligence, surveillance, and reconnaissance is nothing new. Immediately following 9/11, ISR experienced incredible growth. Prior to 9/11 ISR certainly existed, but it was largely reserved for strategic and operational level missions. Today most ground force commanders will not consider even leaving a forward operating base on a tactical mission without some sort of ISR platform providing them cover from overhead. This incredible demand for ISR has led to a booming defense industry developing unmanned aerial vehicles from as small as an insect to larger than many manned aircraft. Off-the-shelf manned aircraft have also been modified to fill the ISR gap and provide increased utility with a man, or men, overhead. The Liberty and U-28 programs were the most notable manned programs. The most recognized unmanned program would likely be the MQ-1 Predator.

The MQ-1 Predator armed with two Hellfire missiles was employed for the first time in combat during Operation Enduring Freedom. It loitered at relatively low altitude over target areas without risk to a pilot while providing fairly high-quality streaming video and a modest attack capability. It transmitted reconnaissance data to various command posts and higher headquarters and also to at least one aerial platform, the AC-130 gunship. It became extremely useful against time-sensitive targets, such as Taliban and al Qaeda leadership. When available, it gave excellent coverage of unit-level engagements, for example, the engagement at Roberts Ridge [Operation Anaconda]. This combat debut suggested the immense potential for UAVs over the battlefield, but it also revealed some pitfalls. One was the tendency of higher headquarters staffs to

focus attention on events within Predator's very narrow field of vision because of their fascination with the video, thereby affecting priorities.⁴⁹⁶

ISR capabilities are also no longer limited to Air Force units. With a myriad of small tactical UAVs available to them, during both OIF and OEF, ground commanders were able to control their own eyes and ears. These UAVs are launched and controlled from the battlefield providing the commander with tailored information on demand.

2. Drone Strikes

Back during WWI, when powered aircraft were used for surveillance, it wasn't long before airmen realized that they could inflict serious damage on the enemy by dropping ordnance from the air. So it should come as no surprise that the obvious progression from unmanned ISR is to establish an offensive capability. It was after WWII in 1945 that General of the Army Air Forces Hap Arnold made the following prediction in his report to the Secretary of War, "We must look at the future of aerial warfare in the light of the following considerations . . . Improvements in aerodynamics, propulsion, and electronics control will enable unmanned devices to transport means of destruction to targets at distances up to many thousands of miles."⁴⁹⁷

With the welcome addition of an offensive capability, UAVs were able to "remain on station for a long time, enabling the elusive goal of instantaneous attack by finding a target, matching it with a weapon, shooting the weapon, and observing the resultant effects."⁴⁹⁸ This was the true innovation of the UAV, the multi-role adaptation.

⁴⁹⁶ Pirnie, *Beyond Close Air Support*, 58.

⁴⁹⁷ Henry H. Arnold, "Air Power and the Future," in *The Impact of Air Power: National Security and World Politics*, ed. Eugene M. Emme (Princeton, NJ: D. Van Nostrand Company Inc., 1959), 309.

⁴⁹⁸ Lambeth, *Airpower Against Terror*, xxix.

3. The Raid to Capture/Kill bin Laden

From the surface it appears that the raid to capture/kill Osama bin Laden was an excellent case of the irregular use of air power in irregular warfare. There have been several periodical articles indicating that the raid was carried out by Special Operations Forces using air power both as a means of air assault (heliborne) on the objective compound and for ISR to gather target data before, during, and after the raid. Perhaps the most in-depth source of information on the raid lies in the recently published book, *No Easy Day*.⁴⁹⁹ While this raid belongs in an in-depth study of air power in irregular warfare, the lack of verifiable data along with the security concerns for the literature, this thesis will not study the raid in depth. In a manner similar to previous vignettes, this case study will likely benefit from future declassification of records pertaining to the raid.

4. Operation Jaque

In an irregular use of air power not yet discussed in this thesis, the Colombian Operation Jaque used Colombian military members and two Colombian MI-17 helicopters both disguised to represent a humanitarian mission in the successful rescue of hostages held by the Revolutionary Forces of Colombia (FARC). Operation Jaque, which has also been referred to as Operation Check or Checkmate in English, is a unique vignette. Its irregular value lies in the covert manner in which air power was used, a distinction held by no other vignette in this thesis. The Joint Publication 1-02 defines a covert operation as “an operation that is so planned and executed as to conceal the identity of or permit plausible denial by the sponsor.”⁵⁰⁰ In contrast, most special

⁴⁹⁹ In a Memorandum For Record from the Office of the Under Secretary of Defense dated September 20, 2012, Department of Defense (DoD) personnel were informed that the recently published book *No Easy Day* contained classified and sensitive unclassified material. DoD members were instructed to not discuss those materials with persons that lack the security clearance and the need to know for such information.

⁵⁰⁰ Joint Publication (JP) 1–02, *Department of Defense Dictionary of Military and Associated Terms*, 2010, 73.

operations fall under the definition of a clandestine operation which is clearly defined in the Joint Publication.

An operation sponsored or conducted by governmental departments or agencies in such a way as to assure secrecy or concealment. A clandestine operation differs from a covert operation in that emphasis is placed on concealment of the operation rather than on concealment of the identity of the sponsor. In special operations, an activity may be both covert and clandestine and may focus equally on operational considerations and intelligence-related activities.⁵⁰¹

After intercepting communications between the leadership and FARC members holding the hostages, a plan was set in place. Surveillance assets were able to determine the location of the hostages and a message was sent to jailers indicating that the hostages would be moved to a new location via helicopter. In a brilliant use of cover, the Colombian Army painted their helicopters to resemble a humanitarian mission earlier in the year from Venezuela.⁵⁰²

13 members of the Colombian Army, unarmed, played the role of crewmembers, medics, and news reporters. . . After twenty two minutes on the ground, 15 hostages boarded the [helicopter] under the custody of their jailer who for years ran their lives with an iron fist. Once on board and airborne, the Colombian military posing as aircrew and cameramen subdued the jailer along with one other insurgent.⁵⁰³

The result was the rescue of Ingrid Betancourt, three American contractors, and 13 Colombian military members without a single shot being fired. Ingrid Betancourt was a Colombian politician and activist captured while running for president and held for over 6 years. The three American contractors were employees of the Northrop Grumman Corporation. During a reconnaissance mission looking for coca fields and drug-processing labs owned

⁵⁰¹ JP 1–02, 46.

⁵⁰² Dylan D. Dombret, “Lessons Learned from Operation Check [Mate]...,” *Air and Space Power Journal, Español Primer Trimestre 2009* (April 2009), <http://www.airpower.au.af.mil/apjinternational/apj-s/2009/1tri09/dombreteng.htm> (accessed October 18, 2012).

⁵⁰³ Dombret, “Lessons Learned from Operation Check [Mate].”

by the FARC, they experienced an engine failure and crash landed their Cessna Caravan in a Colombian jungle.⁵⁰⁴ They were held for over 5 years.

The role air power played in Operation Jaque was not significant because of the aircraft or the type of flying. The hostage rescue was notable because air power was used covertly to deceive the FARC into placing the hostages on the helicopter. This vignette offers a prime example of how a covert air capability can be used innovatively to achieve decisive results.

D. CONCLUSION

Immediately following the terrorist attacks on 9/11, the United States demonstrated the great flexibility of its conventional air power forces. Special Forces and CIA teams in Afghanistan were constantly supported by air, through aerial resupply and highly effective close air support. This was a successful demonstration of how a largely conventional, centrally controlled air force could effectively support an irregular warfare operation. While a testament to the flexibility and skill of modern day airmen, this was largely an example of conventional air power using conventional tactics in support of an unconventional mission on the ground.

The initial success of air power paired with SOF in the initial stages of OEF has threatened the Air Force with a false sense of security much like nuclear weapons did at the conclusion of WWII. Although there have been several cases of innovation and development of new weapon systems, specifically militarized ISR platforms. Many more high tech/high operating cost aircraft were multi-role'd. Several of these aircraft serve as the backbone of our combat air force (CAF) and we have put years of needless wear and tear on them by pushing them into a multi-role simply to prove their relevance and to keep them in the fight. These are flying hours above and beyond the scheduled service life for many of these airframes.

⁵⁰⁴ Mark Gonsalves, Keith Stansell, Tom Howes, and Gary Brozek, *Out of Captivity: Surviving 1,967 Days in the Colombian Jungle* (New York: HarperCollins Publishers, 2009), 3.

This one-size-fits-all approach to air power is a very tempting proposal for the organization for air forces. This mentality is even more pronounced in a time of fiscal austerity that often occurs in a post war drawdown. The missions in Afghanistan and later Iraq quickly conventionalized as more and more forces were deployed into the respective theaters of operations. Although both Iraq and Afghanistan are irregular wars, air power was used, in both theaters, in a conventional manner against irregular opponents. While the Air Force once again performed well, it was for the most part, not engaged in irregular warfare.

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VII. AIR POWER IN IRREGULAR WARFARE: ANALYSIS

Air power was anything but conventional during its introduction to the battlefield from the first military aircraft in 1908 to the start of WWII in 1939. Through intrepid experimentation and trials by fire on the battlefield, airmen developed and revolutionized the tactics, techniques, and procedures for employing air power. As armies, and insurgents, discovered their utility, aircraft played a significant role in numerous irregular and small wars around the world. This early use of air power saw airmen as pioneers during insurgencies, mercenaries of the air, and even as advisors to foreign air forces during the Interwar Years. The British and other colonial powers would utilize the strategy of air control until the collapse of their empires. It could be argued that it was the air control mission that saved the RAF between the world wars. Even as the use of aircraft became accepted and somewhat conventionalized during the course of WWI, airmen continued to fly on the cutting edge, conducting the first special operations night infiltration and exfiltration behind enemy lines. The technological advance of the aircraft, and the airmen exploring their employment in irregular warfare, would revolutionize how wars, both large and small, would be fought for years to come.

This thesis took a very tactical-level approach to looking at air power in irregular warfare. As with many irregular conflicts, however, tactical-level operations can have vast operational and strategic implications. As a series of key vignettes was considered, a number of themes emerged. The value of this research lies in the ability to connect themes to results (both positive and negative). Above all, the overarching theme in this thesis remains; *air power is truly strategic*.

A. DOCTRINE

Since the inception of warfare, there has been a significant effort to make war as short and decisive as possible. This concept has shaped the development of technology, strategy and tactics throughout the modern Western world.⁵⁰⁵ When related to irregular warfare, this trend produces the large conventional forces that are applied to irregular conflict. When met with even minimal success, this trend has only reinforced the misnomer of a one-size-fits-all approach to conflict.

Since its inception, the United States Air Force has struggled to claim its identity while establishing both its relevancy and legitimacy as a separate service. From battling with the Army over the use of helicopters in Vietnam to development of a new light cargo aircraft today, the Air Force has constantly fought to maintain its legitimacy and relevancy as the primary air service. Throughout history, this fight has been founded on the unique strategic utility of air power to reach beyond an enemy's forward line of troops and strike deep within his territory. This concept reaches clear back to WWI where RAF pioneer Hugh Trenchard believed that the "outer air battle both on the main battle front and on its periphery was the key to success in the Tactical Level inner air battle to keep the enemy air force at arm's length."⁵⁰⁶ This translates, in today's vernacular, to holding any target on the globe constantly at risk. The strategic bombardment doctrine developed by the ACTS during the Interwar Years was firmly rooted with the advent of the atomic bomb and the rising threat of the Cold War. The Air Force was "dominated by 'bomber generals' for generations, from the very first Chief of Staff, General Carl A. Spaatz, in September 1947, down through the ninth chief, General David C. Jones, in 1974."⁵⁰⁷

Following the Vietnam War, Americans became obsessed with firepower and technology. For every problem, if the answer did not lie in nuclear

⁵⁰⁵ Drew, "Air Theory, Air Force, and Low Intensity Conflict," 323.

⁵⁰⁶ Hooton, *War Over the Trenches*, 97.

⁵⁰⁷ Boyne, *The Influence of Air Power*, 352.

deterrence, the answer could be found in overwhelming conventional firepower delivered from the air. This is confirmed in a survey of professional air power journals of the period. Besides just a couple of articles, “the Air Force seemed either supremely uninterested in the subject or assumed that, in terms of airpower, protracted revolutionary warfare was just conventional warfare writ small.”⁵⁰⁸ Despite these efforts abroad, and those at home by the Special Air Warfare Center to educate leaders and incorporate insurgency and counterinsurgency into emerging doctrine manuals, a “scant two pages” of lip service was indicative of the true doctrinal emphasis.⁵⁰⁹ Once again, the U.S. Air Force remained ensconced in the doctrine of nuclear and strategic bombing.

The French experience during colonial wars in Chad, Libya and other African nations demonstrated a noticeable shift in doctrine and strategy. Previously, air power played a central role as the agent of control from the air. However, in the late 1970s, this shifted to “an increasing reliance on the air force to project firepower”⁵¹⁰ The British implemented a model using aircraft, and the helicopter in particular, in a supporting role; ground forces resumed primary responsibility for operations. The French built their force around a foundation of strike aircraft. This reliance, coupled with economics, fostered the development of multi-role aircraft such as the Mirage and Jaguar, both backbones of the FAF during this time. French airlift assets were “extremely limited”⁵¹¹ which certainly played a role in this shift to a strike mindset as well.

Ultimately, success in counterinsurgency is not solely based on military might, and especially cannot be achieved by strategic bombing or even precision strike alone.

As demonstrated by the British in Malaya, there are effective counterinsurgent strategies, and airpower can play a significant

⁵⁰⁸ Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 330.

⁵⁰⁹ Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 333.

⁵¹⁰ Lorell, *The French Experience in Africa*, 67.

⁵¹¹ Lorell, *The French Experience in Africa*, 35.

role. The importance of airpower may go far beyond that achieved by the British because so many of the problems they faced have been overcome by technology. However, even the most powerful and sophisticated airpower employment will come to naught if it is not applied as part of a comprehensive military/nonmilitary strategy designed to combat the peculiarities of Maoist-based insurgencies.⁵¹²

This lesson was lost on leadership during this era and was reinforced by conventional, and at least in the eyes of the Air Force, air power led, success in both the Gulf War and Kosovo.

Operations Babylon and El Dorado Canyon were two military actions operations that clearly demonstrated the effectiveness of air power in a situation that was less than total war. In the case of El Dorado Canyon, air strikes were the only military option “ever seriously considered” by President Reagan and his staff.⁵¹³ This progression in the view of air power’s efficacy and reliance on technology would shift policy and doctrine for years to come. As Dennis Drew predicted:

Airpower will likely be the weapon of choice to enforce counterproliferation and counterterrorist policies for at least three reasons. First, airpower will often be the only military means capable of striking at the heart of the problem. Second, air strikes generally are over with quickly, creating less exposure and risk to the participants. . . . The third reason that will make airpower the weapon of choice in future is time. . . . Airpower, of all the military forces, is the most time sensitive in terms of both force preparation and mission execution.⁵¹⁴

The success of air power in the initial stages of OEF further imbued the Air Force with a false sense of security, much like nuclear weapons did at the conclusion of WWII. The one-size-fits-all approach to air power is a very tempting proposal for the organization for air forces. The draw of this mentality is even more pronounced in a time of fiscal austerity that often occurs in a post-war

⁵¹² Drew, “Airpower in Peripheral Conflict,” 291.

⁵¹³ Drew, “Airpower in Peripheral Conflict,” 278.

⁵¹⁴ Drew, “Airpower in Peripheral Conflict,” 288–289.

drawdown. The missions in Afghanistan and later Iraq were quickly conventionalized as more and more forces were deployed into the respective theaters of operations. While the Air Force once again performed well, it rarely engaged in irregular warfare, nor was it an irregular force.

B. STRATEGY

One of the most frequently repeated historical patterns has been the tendency of air forces to develop an effective irregular force during a conflict, only to deactivate the force at the conclusion of hostilities, placing them at an perilous opening disadvantage at the outset of the next conflict. This vicious and detrimental trend has repeated itself at the conclusion of every major conflict since the end of WWII.

WWII saw tremendous gains for air power. The 1st Air Commando Group's success in Burma convinced General Arnold to activate two additional groups later in WWII, only to have them disbanded during the postwar demobilization.⁵¹⁵ At the initiation of hostilities in Korea, the U.S. was caught off guard with a pressing need for an irregular air capability. With a force molded around nuclear deterrence, the U.S. was unprepared. While none of the previous Air Commando units were reactivated,⁵¹⁶ the air forces created a very versatile and functional irregular capability using available technologies in the midst of a conflict. The air forces were extremely capable and effective as they supported clandestine missions into North Korea. However, in a troublesome trend that would repeat again after Vietnam, the Korean irregular forces were deactivated in 1956 much like they were at the conclusion of WWII.

Initially ushered in and championed by the Kennedy administration, the Vietnam era brought the prospect of promising innovation and growth of irregular air power. However, once the Vietnam War became largely conventionalized, the irregular air power capability reverted to the a pattern of disuse. Despite lessons

⁵¹⁵ Trest, *Air Commando One*, 125.

⁵¹⁶ Chinnery, *Any Time, Any Place*, 58.

learned during Malaya and efforts in the early years of Vietnam, air power could not overcome the inertia of bomber-focused doctrine. Following the Vietnam War, Air Force special operations found itself in a rapid decline. “By 1979 only one air force special operations wing was left, with its squadrons composed of AC-130A Spectre gunships, MC-130E Combat Talons, and CH-3E Jolly Green and UH-1N Huey helicopters.”⁵¹⁷ As a hollow force, this was one of the lowest points in American special operations air power history. This claim would later become evident during Operation Eagle Claw, the failed Iranian hostage rescue attempt. Also known as Desert One, Eagle Claw spurred the reorganization that was responsible for much of the joint climate of the mainstream military as well as SOF that exists today.

C. ORGANIZATION

1. Air-to-Ground Coordination

By far the most common theme represented in the effective use of air power in irregular warfare lies in the nature of the relationship between the ground forces and the air forces. In vignette after vignette, we noticed that the closer the coordination between ground and air elements, the greater the chance of success in irregular warfare.

Perhaps the clearest example saw the Germans placing airborne forces under the control of the *Luftwaffe* during WWII. In a force organization that might seem backwards to most, the cohesiveness of this force structure later proved critical to the success of several German airborne (and glider-borne) operations. Placing airborne forces under the control of the *Luftwaffe* “ensured the minimum of friction between the providers of the transport fleet and the men who would use them.”⁵¹⁸

The formation of the Number 1 Air Commando Group to support Orde Wingate’s Chindit forces in Burma provides the quintessential example of close

⁵¹⁷ Marquis, *Unconventional Warfare*, 33.

⁵¹⁸ Weeks, *The Airborne Soldier*, 20.

coordination between air and ground forces. With limited success in his first campaign, the addition of air forces adequately complemented Wingate's tactics, achieving much greater success in the follow-on operation. The air forces remained under the leadership of airmen, yet "were completely integrated into the ground commander's operation and [they] took an active part in planning the campaign."⁵¹⁹ Perhaps no other case in this study provides such a concise and successful example of a truly irregular ground force mated with air forces tailor-made to support the ground commander for a truly strategic outcome.

During WWII the close relationship between the Number 1 Air Commando Group and Wingate's Chindits was absolutely critical to their success. The Carpetbaggers had a similar relationship with the OSS in Europe during WWII. "The closest liaison existed between the secret agencies and the air forces, and the success of the entire program of special operations depended upon full cooperation."⁵²⁰ The partisans who were operating behind enemy lines and dependent on the OSS for survival developed a close relationship for both planning and execution with the air forces.

During Vietnam, Air Force special operators also shared a close relationship with their supported ground counterparts, both American and Vietnamese. Birddog pilots lived amongst U.S. Army Special Forces providing forward air control.⁵²¹ Commandos trained foreign pilots in true FID style. However, once President Johnson ordered the shift to "a massive bombing campaign" in the form of Operation Rolling Thunder, the counterinsurgency, and air power's role in it particularly, virtually came to an end.⁵²²

There is another obvious, yet fundamental lesson that can be learned from Vietnam that was recently repeated during operations in Iraq and Afghanistan. The Army's Air Mobile Division achieved the most fundamental goal of air-to-

⁵¹⁹ John R. Alison quoted in, Peterson, *Chindit Operations in Burma*, 14.

⁵²⁰ Warren, *Special Operations*, 14.

⁵²¹ Marquis, *Unconventional Warfare*, 33.

⁵²² Davis, "Back to the Basics, 14.

ground coordination: a near seamless interface between the air and ground components. Air forces often have different perspectives, speak different languages, or just have different concerns, goals, and interests than their ground counterparts. These differences can cause friction points and result in operations that are not streamlined and coordinated. These issues can contribute to situations like the poor interoperability of Operation Eagle Claw in Iran in 1980 or more recently issues that arose during Operation Anaconda in Afghanistan in 2002. The bottom line is that Army aviation units are organic to the ground commander, making them an easily cohesive and more integrated member of any joint force from the start. The goal of the Air Force should always be to foster a near-organic working relationship with the supported forces.

Shortly after 9/11 the Army sent its SF ODA teams to Afghanistan, integrating an AF CCT with each team. This was somewhat of a first, perhaps a milestone in Army/Air Force cooperation. Pairing SF and CCT essentially positioned an AF liaison with each ODA and provided almost unparalleled coordination at the tactical level. “These Army SOF troops, with their attached Air Force terminal attack controllers, would provide the first eyes on target for enabling what eventually became a remarkably successful U.S. exercise in air-ground cooperation.”⁵²³ OEF saw conventional air forces used to support irregular ground forces in air missions that were largely conventional. The AF liaison embedded with SF had its limitations however. The combat aircrews still lacked face-to-face relationships with ground forces and their ultimate authority was still located at PSAB in Saudi Arabia. Out of logistical necessity, many of the special operations aircrews were also geographically separated from the ground troops they supported. AFSOC crews daily flew over 15-hour resupply missions to Afghanistan from their base of operations within the European theater.

The large-scale introduction of conventional troops to Afghanistan, brought with it changes to the tactical impact air power had on the battlefield. The

⁵²³ Lambeth, *Airpower Against Terror*, xviii.

culminating event was quite possibly Operation Anaconda. In Anaconda the air component was not addressed at any level of planning. In the end, it was CAS that was decisive. Last, there were friendly fire incidents that could have been prevented with better coordination. The benefits of using CCT in coordination with SOF cannot be overstated, yet there is still a layer of separation between the supported forces and the supporting forces. As long as there is a layer between the two, air power may not be at its most effective.

2. Contract Air

Shortly after the dawn of aviation, nations struggled to learn how to best integrate air forces into their overall war strategies. As a result, many nations were forced to employ mercenaries to make up for the shortfall in the irregular capabilities of their own forces. These shortfalls were not solely limited to the early days of aviation. Mercenary pilots and contract aviation were prevalent throughout conflict on the African continent during the 1950s till today. The operations of Air America and Bird Air within the context of the Vietnam War solidified the importance of contract air when conducting irregular warfare. With a largely conventional air force in theater, the expansion of contract air forces was necessary to meet air/ground support requirements. The three American contractors that were rescued in Operation Jaque were employees of the Northrop Grumman Corporation. They were on a mission the government was either unable or unwilling to execute directly. The bottom line is that often contract air firms are used to fill gaps in the irregular capabilities of conventional air forces.

These trends continued in Iraq and Afghanistan as the contract air business exploded. Companies such as DynCorp International, Avenge Inc, Flightworks Inc, and Presidential Airways have all reaped the benefit of the increased requirements for ISR as well as combat airland and airdrop platforms that the air force cannot meet with its current force.

D. TECHNOLOGY

The use of technology in air power is often strange and contradictory. The importance of harmonizing weapons and doctrine is a lesson from as far back as the Great War, if not further. While it seems retroussé to discuss situations where low technology is better than high technology, this is a lesson in air power that is still not learned today. In IW, more isn't always better; low-tech is sometimes more effective. Both high-tech and low-tech have their place in IW. The key is to know which technology is called for and to apply it appropriately. In order to be employed properly, air power must be capable of flexing to the demands of the current conflict and technology is a key component to this flexibility. Today this flexibility is often manifested in converted aircraft executing multiple missions disparate from the intent of their original design. The ability to execute some missions is partially compromised in order to create/sustain the ability to conduct others. This modern interpretation of flexibility is based on technology rather than tactics and often means a less than ideal match between mission set and aircraft. In addition, unnecessary wear and tear is placed on airframes that must be relied upon to be operational for many years to come. Expensive to operate, 3rd and 4th generation fighters are now often used to execute missions which could be accomplished by simpler airframes with lower procurement, training and operating expenses. The unfortunate consequence is that large conventional multi-role forces are often applied to a very narrow irregular mission with limited success.

1. Low Technology

SOF are generally known for using the latest gadgets and technologies. Similarly, the AF has been the perennial force associated with new and high technologies. With that in mind, the air power used in IW is often the exact opposite. A very common trend among the vignettes in this thesis is existing, low technology used with great success in IW. The Air Force has a tendency to create new platforms to address emerging threats. The study of IW in this thesis

points to the opposite; legacy aircraft and technologies that are usually modified for use in the current irregular conflict with great success.

During WWI, dirigibles were used by both sides. Germany was particularly fond of Count Ferdinand von Zeppelin's rigid dirigibles, using them for bombing missions across the English Channel almost nightly. While dirigibles marked a significant innovation, the existence of lighter-than-air balloons pre-dates the first powered flight by over a century, as they can be traced back to flight in the late 1700's.⁵²⁴ Today, almost a century later there are periodic calls for fielding of dirigibles in Afghanistan. While still a relatively old technology, in the permissive air environment of Afghanistan, the dirigible is a tempting option for ISR with its extremely long loiter times.

Perhaps the greatest testament to the use of low-tech air power was the use of gliders by the Germans in WWII. Based on restrictions put in place by the Treaty of Versailles at the conclusion of WWI, Germany had a very skilled cadre of glider pilots. Thus, out of strategic necessity, the Germans relied heavily on glider-borne raids that proved to be a concentrated and decisive technique for air assault. While gliders preceded the first powered flight in late 1903, they received little attention in the years that would follow. As a validation of the low technological solution to an air assault, following German successes, the Allies developed and used glider-borne forces throughout WWII. Gliders proved valuable for the silent manner in which they surprised the enemy by delivering a concentrated assault force. However, with a fairly high success rate in special operations, it is puzzling to note that after the conclusion of WWII, gliders were never again used extensively in combat.

As a further testament to low technology air power, this trend continued with the Douglas C-47 Skytrain. Designed as a cargo aircraft based on the Douglas DC-3 airliner, the C-47 has played a role in countless conflicts since its delivery to the Army Air Forces in 1941. The C-47 had a reinforced floor, cargo

⁵²⁴ Clarke, *The History of Airships*, 21.

door and was modified to tow gliders making it a very useful aircraft in WWII.⁵²⁵ Flown by every branch of the U.S. military and all the Allies during WWII, it could carry a Jeep or 6000 pounds of cargo or 28 soldiers in full combat gear.⁵²⁶ Additionally, the aircraft was given greater than 22 designations to include the AC-47D gunship during Vietnam.⁵²⁷

The C-47 was used widely in irregular warfare supporting both Orde Wingate's Chindit forces in Burma as well as the OSS in Europe. Following WWII, the C-47 was used by the French in Algeria, a truly irregular conflict. While not necessarily an irregular use covered in this thesis, the C-47 was the backbone of the Berlin Airlift in 1945. What sealed the Skytrain in air power and IW history was its selection over newer, more expensive and higher technological airplanes for use in both Korea and Vietnam. During the Korean War, the C-47 was used by Heinie Aderholt's special mission detachment for clandestine operations deep inside North Korea.⁵²⁸ Later during the conflict, the C-47 was modified to hold two 75 gallon napalm bombs under the belly of the transport to drop bombs on lucrative targets found after dropping agents from the aircraft.⁵²⁹

The North Koreans also made use of low-tech aircraft in their airborne IW force. In their case it was the AN-2 Colt, a wood and fabric biplane capable of hauling up to 12 passengers. The Colt was, and still is, uniquely suited as an IW platform. As a STOL aircraft, the Colt was designed to fly low and slow. This ability along with its wood and fabric construction makes it especially difficult to

⁵²⁵ "History: C-47 Skytrain Military Transport," *Boeing*.
<http://www.boeing.com/history/mdc/skytrain.htm> (accessed November 15, 2012).

⁵²⁶ "History: C-47 Skytrain Military Transport."

⁵²⁷ "History: C-47 Skytrain Military Transport."

⁵²⁸ Trest, *Air Commando One*, 29–30.

⁵²⁹ Trest, *Air Commando One*, 33.

detect on even modern radar systems. The AN-2 can infiltrate North Korean paratroopers behind enemy lines throughout the entire South Korean peninsula.⁵³⁰

Nearly two decades later, sixteen C-47's were used by Jungle Jim elements of the 4400th CCTS in Vietnam where they were modified for twice the normal fuel capacity, strengthened for operations on unimproved landing zones, and equipped for rocket assisted takeoffs.⁵³¹ They were later used extensively by the CIA's Air America. It is also curious to note that until recently, AFSOC's 6th SOS maintained the FID capability to operate and train foreign forces in the C-47.

The history of the C-47 in irregular warfare is particularly enlightening, as it clearly demonstrates the vital need for a versatile light/medium lift cargo capability as an important component of an effective IW air force. This gives specific validation of the previously discussed RAND report which recommended that the USAF develop and procure light cargo aircraft in the 3,000- to 6,000-pound payload range.⁵³² This would fill the air force IW capability gap that has become evident during operations in both Iraq and Afghanistan.

The positive contribution of a small, often legacy and low-cost tactical close air support platforms is another low-tech trend in the IW vignettes of this thesis. After the conclusion of WWII, the French had a fleet of newer and more modern aircraft such as the F-86 Sabrejet. When these aircraft were found unsuitable for the intended counterinsurgency operations, the French Air Force turned to WWII legacy aircraft including the T-6. As a slow, sturdy, and cheap aircraft that could takeoff/land on austere strips the T-6 was ideal for the environment.

⁵³⁰ Troy P. Krause, "Countering North Korean Special Purpose Forces" (master's thesis, Air Command and Staff College, 1999), <http://www.au.af.mil/au/awc/awcgate/acsc/99-102.pdf> (accessed November, 25, 2012), 14.

⁵³¹ Corum, *Airpower in Small Wars*, 245.

⁵³² Mesic, *Courses of Action*, 23.

British aircraft procurement throughout the 1940s and into the 1960s, like the French, was also focused on jet powered, technologically advanced aircraft to replace piston-driven aircraft. However, it was these supposedly antiquated aircraft that were the foundation for the success not just in Malaya, but also in other peripheral conflicts in the “mountainous forests of Kenya” and “narrow wadis of the Arabian Peninsula.”⁵³³ Similar to lessons learned by the French in Algeria, RAF officers also experienced the advantages of vintage aircraft in a counterinsurgency. In turn, they too, recognized the need for “slow speed, long loiter time, and pinpoint accuracy in counter-guerilla operations.”⁵³⁴

Use of legacy aircraft continued in Vietnam. Toward the end of 1960, the U.S. supported the Lao Air Force with AT-6 Texans. Later the Jungle Jim elements made use of another modified trainer, the T-28. These examples lend further credence to the RAND report’s recommendation for a counterinsurgency-dedicated close air support and armed overwatch platform, an asset that the current force is lacking. A small tactical CAS platform that is closely coordinated with the supported force is indispensable. The small low cost platform is easy to field and provides the ground forces with the overwatch, longer station times, and tactical firepower desired while relieving pressure on the strained combat air force fleet. Several recent attempts have been made to field such a platform, but contracting issues and a lack of full support/buy-in from Air Force leadership has led these half-hearted attempts to failure.

The examples above that identify the need for legacy, low cost platforms also highlight the need for combat aviation advisors. Low cost aircraft (fixed and rotary wing) are often given to partner nations as a part of the train, advise and assist mission. In 1937, when Claire Chennault was invited to China to train and organize the Chinese Air Force, he took on a classic FID role. By 1941, in December of which America entered WWII, the U.S. gave Chennault’s Flying

⁵³³ Hoffman, 80.

⁵³⁴ Corum, 197.

Tigers, one hundred legacy P-40s in an effort to keep China in the war.⁵³⁵ The role of combat FID during Vietnam could not be overstated. Jungle Jim elements, as well as operations like Farm Gate, Ranch Hand, Waterpump, and Duck Hook were all quintessential FID missions in Laos and Vietnam. Thousands of sorties were flown and hundreds of aircraft were given to the air forces trained by U.S. combat aviation aviators. Once again, the same RAND report discussed above, supported this theory and highlighted the need for combat aviation advisors in Iraq and Afghanistan. The report also indicated that the demand for combat aviation advisors in both nations would increase significantly.⁵³⁶ One can also reasonably project these ideas on the extensive global effort against insurgencies and terrorism. Despite this report, combat aviation advising remains one of AFSOC's lowest priorities and support for the program, especially rotary-wing, has actually been cut rather than expanded.

2. High Technology

While not as obvious as other trends in our analysis, high technology has also had an impact on air power in IW. More often than not, when high technology is applied to IW, conventional forces and increases in manpower, supplies, equipment and national oversight all come concurrently. To put it bluntly, high technology comes hand-in-hand with large increases in the size and scale of forces and conflict. These increases are rarely beneficial to irregular warfare and potentially mask the true impact of technology on IW.

Perhaps the most poignant case was in Vietnam where the Army developed a truly innovative counterinsurgency (COIN) capability in its air-mobile force. While this technology held the potential to dramatically enhance COIN activities, it was quickly enveloped by the conventional Army who viewed it as a means to support conventional operations versus a counterinsurgency.⁵³⁷ Despite

⁵³⁵ Robbins, 42.

⁵³⁶ Mesic, *Courses of Action*, 26.

⁵³⁷ Krepinevich, *The Army and Vietnam*, 122.

this conventionalization, the large air assault forces forged a capability for battlefield mobility that “transformed the war.”⁵³⁸ The helicopter was also integral to the successful British campaign in Dhofar as it was used to deliver assault forces on target, keep them supplied and evacuate their casualties.⁵³⁹ Britain’s experience throughout this period of peripheral conflict demonstrated the absolute utility of the helicopter. Helicopters became the backbone for logistics and support of fielded forces and the British campaign exhibited the need for solid helicopter support.⁵⁴⁰

Operation Ugly Baby was an excellent example of using high technology air power platforms for their intended design and purpose. Combat Talons were designed with this type of mission in mind, and they excel where other “slick” C-130s or tactical airlifters would fail. Unfortunately, these platforms also fell into disuse when they began performing missions that could be accomplished by a less sophisticated airframe at a much-reduced operating cost. In this case a weapons system designed to be multi-role began to execute a mission set that could be conducted by a less capable platform, at a much-reduced cost.

The most notable modern example of high technology applied to IW lies with the use of manned and unmanned overwatch and platforms. While the platforms are not always high cost, the additional ISR capable technology is. Initially, low-tech aircraft were procured and modified to provide ISR to the counterinsurgent. AFSOC’s U-28 program and the Liberty Program that converted Pilatus PC-6s and King Air 350s, respectively, into highly capable ISR platforms are excellent examples of adapting to the needs of the current conflict. Prior to 9/11 ISR certainly existed, but it was largely reserved for strategic and operational level missions. Today most ground force commanders will not even consider leaving a forward operating base on a tactical mission without some sort of ISR platform providing them cover from overhead. What initially began as a

⁵³⁸ Towle, *Pilots and Rebels*, 164.

⁵³⁹ Hoffman, *British Air Power in Peripheral Conflict*, 106.

⁵⁴⁰ Hoffman, *British Air Power in Peripheral Conflict*, 111.

high technology asset easily applied to IW, morphed into a capability adopted and often dominated by conventional forces. These same arguments could be applied to UAVs with the capabilities to both watch and strike targets.

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VIII. AIR POWER IN IRREGULAR WARFARE: CONCLUSION

One theme of this thesis was that conventional air power is strategic. Few would argue with that simple assertion. Yet the role of air power in IW is predominantly tactical and in IW, tactical-level operations often have vast operational and strategic impacts. Barely a century old, the history of powered flight is short compared with the storied history of other forms of warfare. Yet, this history of air power is still rich with lessons that are applicable to modern day. Air power has transformed the manner in which war will be fought for centuries to come. Since an opponent's forces can now be held at risk from an air force, this component must be accounted for when planning a campaign, whether conventional or irregular. Air superiority, or at least the ability to operate in the air with impunity, is critical for success on the ground to occur.

Several significant points were discovered in this thesis.

1. Prevailing doctrine has promoted a one-size-fits-all mentality that more often than not results in conventional forces being applied to inefficiently to irregular conflicts.
2. Air forces have found the need to develop effective irregular air forces amidst conflict only to deactivate the force at the conclusion of the hostilities, placing them at a perilous opening disadvantage at the outset of the next conflict.
3. The closer the coordination (training, planning, operations, etc.) between tactical level ground and air elements of irregular forces, the greater the chances of success.
4. Gaps in irregular air power capabilities frequently drive the extensive use of contract air forces in irregular warfare.
5. Legacy, low technology aircraft are frequently more effective in IW than their modern, high technology counterparts.

6. Vital capabilities of an effective IW air capability include a low cost, light/medium lift cargo capability and a small, low cost tactical close air support capability, both supported by a robust contingent of combat aviation advisors.
7. While there are cases where high technology has a significant positive and innovative effect on IW, these cases are frequently accompanied by large conventional forces that conventionalize and/or misuse the capability.

Within that history are vast differences between conventional and irregular air power forces and missions (both real and perceived). These forces and missions are not, however, mutually exclusive. Most conventional air forces can be applied to both conventional and irregular missions. Likewise, most irregular air forces can also be applied to both irregular and conventional missions. The utility of both types of air forces is obvious from the discussion in this thesis. What should also be clear is that the roots of both conventional and irregular air power theory are similar. These capabilities were born from the same theorists, the same technologies, and the same conflicts. The differences between conventional and irregular air power theory lie in the forces and the missions themselves. Conventional forces will always be more effective in conventional conflicts just as irregular forces will always be more effective in irregular conflicts. Thus, the true utility of air power in IW lies in matching the right forces to the right missions. A dedicated IW air capability with forces specifically trained and utilized in IW must reside within the current force.

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